

**Table S3** The astrocyte endfeet ribosome-bound transcriptome. Selected mRNAs have a mean read  $\geq 50$  and exon coverage  $\geq 80\%$ . The fold change between the ribosome-bound mRNAs in endfeet and whole astrocyte TRAP libraries (Log<sub>10</sub> FC) and the associated p value are indicated. Transcripts are ordered following their sequencing rate in the endfeet.

| Ensembl ID         | Gene name  | Gene description  | log10 FC | padj     | Mean reads "total" | Mean reads "endfeet" | Exon coverage "total" | Exon coverage "endfeet" |
|--------------------|------------|---|----------|----------|--------------------|----------------------|-----------------------|-------------------------|
| ENSMUSG00000061808 | Tr         | transthyretin   | -1.5     | 3.8E-07  | 10767.7            | 403008.4             | 94                    | 100                     |
| ENSMUSG0000005089  | Slc1a2     | solute carrier family 1 (glial high affinity glutamate transporter), n    | -0.3     | 6.9E-02  | 102397.3           | 197085.7             | 93                    | 92                      |
| ENSMUSG00000037852 | Cpe        | carboxypeptidase E  | -0.6     | 4.9E-07  | 42738.0            | 180164.1             | 98                    | 97                      |
| ENSMUSG00000022425 | Enpp2      | ectonucleotide pyrophosphatase/phosphodiesterase 2                        | -1.8     | 1.9E-17  | 1629.6             | 116970.5             | 93                    | 99                      |
| ENSMUSG00000007097 | Atp1a2     | ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, alpha 2 polypeptide | -0.7     | 1.8E-08  | 19643.3            | 93438.5              | 92                    | 94                      |
| ENSMUSG00000025203 | Scd2       | stearoyl-Coenzyme A desaturase 2  | -0.3     | 3.0E-02  | 28475.0            | 61091.5              | 90                    | 90                      |
| ENSMUSG00000026678 | Rgs5       | regulator of G-protein signaling 5  | -2.4     | 2.1E-97  | 207.0              | 55962.9              | 86                    | 89                      |
| ENSMUSG00000029309 | Sparc1     | SPARC-like 1  | -0.5     | 1.0E-05  | 15918.2            | 55489.8              | 97                    | 93                      |
| ENSMUSG00000024140 | Epas1      | endothelial PAS domain protein 1  | -0.7     | 1.9E-18  | 9117.4             | 49546.7              | 99                    | 99                      |
| ENSMUSG0000000184  | Ccnd2      | cyclin D2   | -1.2     | 2.5E-09  | 1680.1             | 31211.3              | 98                    | 96                      |
| ENSMUSG00000022708 | Zbtb20     | zinc finger and BTB domain containing 20                                  | -0.4     | 3.8E-04  | 12298.7            | 29553.7              | 87                    | 86                      |
| ENSMUSG00000030096 | Slc6a6     | solute carrier family 6 (neurotransmitter transporter, taurine), men      | -1.7     | 1.0E-57  | 498.0              | 28889.9              | 96                    | 99                      |
| ENSMUSG00000009575 | Cbx5       | chromobox 5   | -0.6     | 4.7E-05  | 6657.7             | 28609.6              | 99                    | 98                      |
| ENSMUSG00000031342 | Gpm6b      | glycoprotein m6b  | -0.2     | 1.5E-01  | 16587.2            | 27929.0              | 86                    | 88                      |
| ENSMUSG00000033960 | 9430020K01 | RIKEN cDNA 9430020K01 gene  | -1.7     | 2.2E-65  | 492.5              | 27122.1              | 95                    | 98                      |
| ENSMUSG00000058297 | Spock2     | sparc/osteonectin, cwcv and kazal-like domains proteoglycan 2             | -1.4     | 5.8E-44  | 934.8              | 23164.1              | 89                    | 86                      |
| ENSMUSG00000004558 | Ndr2       | N-myc downstream regulated gene 2   | 0.9      | 9.9E-10  | 167748.8           | 21459.7              | 93                    | 91                      |
| ENSMUSG00000028649 | Macf1      | microtubule-actin crosslinking factor 1                                   | -1.4     | 3.6E-89  | 781.4              | 20809.5              | 81                    | 86                      |
| ENSMUSG00000026436 | Elk4       | ELK4, member of ETS oncogene family                                       | -1.5     | 1.7E-22  | 631.1              | 20441.5              | 82                    | 85                      |
| ENSMUSG00000024411 | Aqp4       | aquaporin 4   | -0.5     | 7.0E-04  | 6366.9             | 20426.3              | 99                    | 99                      |
| ENSMUSG00000026667 | Uhmk1      | UZAF homology motif (UHM) kinase 1  | -0.4     | 3.1E-03  | 7569.7             | 19071.3              | 91                    | 89                      |
| ENSMUSG00000027663 | Zmat3      | zinc finger matrin type 3   | -0.4     | 4.8E-02  | 6581.6             | 17186.6              | 90                    | 83                      |
| ENSMUSG00000025780 | Ith5       | inter-alpha (globulin) inhibitor H5                                       | -1.6     | 2.9E-108 | 447.7              | 16880.1              | 97                    | 98                      |
| ENSMUSG00000064370 | mt-Cytb    | mitochondrially encoded cytochrome b                                      | -2.0     | 2.6E-82  | 160.3              | 16722.1              | 98                    | 100                     |
| ENSMUSG00000002341 | Ncan       | neurocan  | -0.8     | 2.8E-09  | 2785.0             | 16286.6              | 89                    | 86                      |
| ENSMUSG00000064367 | mt-Nd5     | mitochondrially encoded NADH dehydrogenase 5                              | -2.2     | 9.3E-128 | 85.9               | 15555.4              | 91                    | 99                      |
| ENSMUSG00000031996 | Aplp2      | amyloid beta (A4) precursor-like protein 2                                | -0.9     | 1.2E-20  | 1900.8             | 15519.1              | 93                    | 94                      |
| ENSMUSG00000028211 | Trp53inp1  | transformation related protein 53 inducible nuclear protein 1             | -1.2     | 1.9E-10  | 931.2              | 15481.1              | 82                    | 81                      |
| ENSMUSG00000017707 | Serinc3    | serine incorporator 3   | -1.1     | 6.8E-65  | 1149.4             | 15406.4              | 93                    | 90                      |
| ENSMUSG00000010663 | Fads1      | fatty acid desaturase 1   | -0.2     | 7.5E-02  | 8978.6             | 14949.1              | 92                    | 94                      |
| ENSMUSG00000020849 | Ywhae      | tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activati              | 0.6      | 5.2E-11  | 54167.1            | 14889.2              | 81                    | 80                      |
| ENSMUSG00000064341 | mt-Nd1     | mitochondrially encoded NADH dehydrogenase 1                              | -2.1     | 2.0E-92  | 115.7              | 14764.2              | 100                   | 100                     |
| ENSMUSG00000021356 | Irf4       | interferon regulatory factor 4  | -2.2     | 1.2E-25  | 84.7               | 14153.5              | 85                    | 97                      |
| ENSMUSG00000001175 | Calml1     | calmodulin 1  | 0.4      | 2.0E-10  | 34950.5            | 14066.3              | 84                    | 84                      |
| ENSMUSG00000008730 | Hipk1      | homeodomain interacting protein kinase 1                                  | -0.6     | 4.6E-05  | 3716.0             | 13863.8              | 92                    | 90                      |
| ENSMUSG00000019820 | Utn        | utrophin  | -1.5     | 6.5E-86  | 382.9              | 13714.9              | 84                    | 95                      |
| ENSMUSG00000037071 | Scd1       | stearoyl-Coenzyme A desaturase 1  | -0.4     | 4.7E-03  | 5182.4             | 13428.0              | 96                    | 95                      |
| ENSMUSG00000028645 | Slc2a1     | solute carrier family 2 (facilitated glucose transporter), member 1       | -1.4     | 2.2E-151 | 560.1              | 13303.9              | 91                    | 91                      |
| ENSMUSG00000039218 | Srrm2      | serine/arginine repetitive matrix 2                                       | -0.3     | 3.8E-03  | 7372.6             | 13290.4              | 91                    | 90                      |
| ENSMUSG00000022108 | Itm2b      | integral membrane protein 2B  | -0.4     | 6.5E-06  | 4963.6             | 13200.8              | 99                    | 99                      |
| ENSMUSG00000021939 | Ctsb       | cathepsin B   | -0.6     | 1.6E-10  | 3113.4             | 12987.5              | 91                    | 84                      |
| ENSMUSG00000062078 | Qk         | quaking   | 0.7      | 6.8E-08  | 59349.0            | 12709.6              | 91                    | 89                      |
| ENSMUSG00000024758 | Rtn3       | reticulon 3   | -0.2     | 5.7E-02  | 7938.7             | 12647.7              | 92                    | 81                      |
| ENSMUSG00000020932 | Gfap       | glial fibrillary acidic protein   | 0.2      | 3.6E-01  | 18668.1            | 12454.6              | 87                    | 83                      |
| ENSMUSG00000036698 | Ago2       | argonaute RISC catalytic subunit 2  | -0.7     | 2.3E-05  | 2341.6             | 12227.1              | 87                    | 81                      |
| ENSMUSG00000044708 | Kcnj10     | potassium inwardly-rectifying channel, subfamily J, member 10             | -0.3     | 1.8E-02  | 5744.5             | 12097.7              | 95                    | 96                      |
| ENSMUSG00000026234 | Ncl        | nucleolin   | -0.8     | 2.5E-10  | 1918.6             | 12044.5              | 91                    | 84                      |
| ENSMUSG00000094483 | Purb       | purine rich element binding protein B                                     | -0.1     | 3.2E-01  | 8494.7             | 12037.3              | 89                    | 88                      |
| ENSMUSG00000030516 | Tjp1       | tight junction protein 1  | -0.4     | 2.0E-06  | 4500.9             | 11945.3              | 91                    | 88                      |
| ENSMUSG00000026434 | Nuks1      | nuclear casein kinase and cyclin-dependent kinase substrate 1             | -0.3     | 1.2E-01  | 6266.9             | 11727.1              | 95                    | 94                      |
| ENSMUSG00000026697 | Myoc       | myocilin  | -1.4     | 1.1E-38  | 429.3              | 11713.3              | 92                    | 98                      |
| ENSMUSG00000024991 | Eif3a      | eukaryotic translation initiation factor 3, subunit A                     | -0.8     | 2.0E-09  | 1839.2             | 11509.4              | 89                    | 89                      |
| ENSMUSG00000030654 | Arf6ip1    | ADP-ribosylation factor-like 6 interacting protein 1                      | -0.5     | 3.3E-04  | 3682.1             | 11425.4              | 95                    | 95                      |
| ENSMUSG00000031447 | Lamp1      | lysosomal-associated membrane protein 1                                   | -0.5     | 5.2E-09  | 3686.1             | 11167.1              | 90                    | 91                      |
| ENSMUSG00000037503 | Fam168b    | family with sequence similarity 168, member B                             | -0.1     | NA       | 7928.9             | 11133.4              | 93                    | 82                      |
| ENSMUSG00000020368 | Cxnx       | calnexin  | -0.7     | 3.1E-17  | 2098.3             | 11060.5              | 89                    | 88                      |
| ENSMUSG00000068748 | Ptprz1     | protein tyrosine phosphatase, receptor type Z, polypeptide 1              | -0.7     | 2.8E-06  | 2215.0             | 10927.6              | 94                    | 93                      |
| ENSMUSG00000017291 | Taok1      | TAO kinase 1  | -0.1     | 4.8E-01  | 8746.4             | 10886.8              | 93                    | 90                      |
| ENSMUSG00000024661 | Fth1       | ferritin heavy chain 1  | -0.4     | 1.8E-05  | 4180.8             | 10618.1              | 94                    | 94                      |
| ENSMUSG00000025666 | Tmem47     | transmembrane protein 47  | -0.2     | 2.2E-01  | 7128.2             | 10544.0              | 99                    | 99                      |
| ENSMUSG00000030275 | Etnk1      | ethanolamine kinase 1   | -0.4     | 6.2E-03  | 3863.4             | 10484.8              | 94                    | 92                      |
| ENSMUSG00000052727 | Map1b      | microtubule-associated protein 1B   | -0.1     | 1.4E-01  | 8278.9             | 10320.7              | 95                    | 95                      |
| ENSMUSG00000043131 | Mob1a      | MOB kinase activator 1A   | -0.5     | 2.3E-03  | 2828.7             | 10019.0              | 88                    | 86                      |
| ENSMUSG00000032053 | Pou2af1    | POU domain, class 2, associating factor 1                                 | -2.1     | 2.4E-24  | 63.4               | 9990.8               | 83                    | 91                      |
| ENSMUSG00000060802 | B2m        | beta-2 microglobulin  | -0.7     | 1.6E-14  | 1868.7             | 9576.2               | 97                    | 97                      |
| ENSMUSG00000055322 | Tns1       | tensin 1  | -0.9     | 7.3E-27  | 1172.7             | 9574.4               | 87                    | 90                      |
| ENSMUSG00000020611 | Gna13      | guanine nucleotide binding protein, alpha 13                              | 0.4      | 3.9E-02  | 21824.5            | 9565.4               | 95                    | 87                      |
| ENSMUSG00000029467 | Atp2a2     | ATPase, Ca <sup>++</sup> transporting, cardiac muscle, slow twitch 2      | -0.3     | 1.6E-03  | 4587.5             | 9536.0               | 83                    | 84                      |
| ENSMUSG00000032186 | Tmod2      | tropomodulin 2  | 0.3      | 4.1E-03  | 20860.5            | 9525.1               | 90                    | 89                      |
| ENSMUSG00000059495 | Arhgef12   | Rho guanine nucleotide exchange factor (GEF) 12                           | -0.1     | 2.2E-01  | 7289.5             | 9379.5               | 89                    | 83                      |
| ENSMUSG00000058013 | Sept11     | septin 11   | -0.7     | 4.3E-18  | 1891.2             | 9221.4               | 97                    | 94                      |
| ENSMUSG00000044468 | Fam46c     | family with sequence similarity 46, member C                              | -1.9     | 3.8E-25  | 104.7              | 9212.6               | 81                    | 88                      |
| ENSMUSG00000038612 | Mcl1       | myeloid cell leukemia sequence 1  | -0.6     | 6.8E-05  | 2493.1             | 9053.0               | 82                    | 80                      |
| ENSMUSG00000017390 | Aldoc      | aldolase C, fructose-bisphosphate   | 1.2      | 4.2E-20  | 138750.1           | 8753.7               | 85                    | 83                      |
| ENSMUSG00000041577 | Prelp      | proline arginine-rich end leucine-rich repeat                             | -1.0     | 2.3E-19  | 850.9              | 8717.4               | 99                    | 99                      |
| ENSMUSG00000026576 | Atp1b1     | ATPase, Na <sup>+</sup> /K <sup>+</sup> transporting, beta 1 polypeptide  | -0.3     | 4.8E-02  | 4739.1             | 8505.9               | 84                    | 83                      |
| ENSMUSG00000049354 | Deaf7      | DDI1 and CUL4 associated factor 7   | -0.3     | 9.1E-02  | 3625.1             | 8246.7               | 86                    | 84                      |
| ENSMUSG00000020091 | Eif4ebp2   | eukaryotic translation initiation factor 4E binding protein 2             | -0.9     | 7.3E-10  | 947.6              | 8221.9               | 93                    | 93                      |
| ENSMUSG00000004207 | Psap       | prospalin   | -0.7     | 9.4E-08  | 1685.1             | 8112.5               | 87                    | 89                      |
| ENSMUSG00000031517 | Gpm6a      | glycoprotein m6a  | 0.1      | 4.5E-01  | 10686.2            | 8086.1               | 92                    | 88                      |
| ENSMUSG00000068284 | Gm608      | predicted gene 608  | -0.8     | 8.7E-12  | 1301.6             | 7928.8               | 92                    | 81                      |
| ENSMUSG00000056429 | Tgolin1    | trans-golgi network protein   | -0.7     | 4.0E-14  | 1503.0             | 7894.7               | 90                    | 93                      |
| ENSMUSG00000041852 | Tcf20      | transcription factor 20   | -1.0     | 3.1E-10  | 790.8              | 7886.1               | 88                    | 80                      |
| ENSMUSG00000032399 | Rpl4       | ribosomal protein L4  | -0.6     | 5.2E-04  | 1883.8             | 7862.4               | 83                    | 81                      |
| ENSMUSG00000048960 | Prex2      | phosphatidylinositol-3,4,5-trisphosphate-dependent Rac exchange           | 0.2      | 2.6E-01  | 11080.0            | 7783.1               | 91                    | 87                      |
| ENSMUSG00000024294 | Mib1       | mindbomb homolog 1 (Drosophila)   | -0.1     | 3.2E-01  | 5633.9             | 7779.0               | 88                    | 85                      |
| ENSMUSG00000030310 | Slc6a1     | solute carrier family 6 (neurotransmitter transporter, GABA), men         | 0.0      | 8.9E-01  | 7313.7             | 7722.0               | 91                    | 92                      |
| ENSMUSG00000057530 | Ece1       | endothelin converting enzyme 1  | -1.3     | 6.8E-48  | 425.2              | 7695.6               | 83                    | 83                      |
| ENSMUSG00000096188 | Cntn4      | CKLF-like MARVEL transmembrane domain containing 4                        | -0.8     | 2.7E-06  | 1268.1             | 7668.8               | 89                    | 82                      |
| ENSMUSG00000002028 | Kmt2a      | lysine (K)-specific methyltransferase 2A                                  | -0.9     | 4.4E-15  | 963.2              | 7655.4               | 85                    | 86                      |
| ENSMUSG00000026185 | Igfbp5     | insulin-like growth factor binding protein 5                              | -0.5     | 2.7E-05  | 2232.8             | 7636.8               | 97                    | 96                      |
| ENSMUSG00000021750 | Fam107a    | family with sequence similarity 107, member A                             | 1.3      | 1.7E-37  | 164879.7           | 7554.3               | 85                    | 82                      |

|                    |           |  |      |         |         |        |     |     |
|--------------------|-----------|--|------|---------|---------|--------|-----|-----|
| ENSMUSG00000063796 | Slc22a8   | solute carrier family 22 (organic anion transporter), member 8     | -1.5 | 8.7E-36 | 257.3   | 7534.6 | 89  | 98  |
| ENSMUSG00000005583 | Mef2c     | myocyte enhancer factor 2C   | -0.3 | 2.9E-02 | 3423.1  | 7531.6 | 90  | 83  |
| ENSMUSG00000039100 | March6    | membrane-associated ring finger (C3HC4) 6                          | -0.7 | 8.6E-09 | 1412.6  | 7414.6 | 83  | 86  |
| ENSMUSG00000021427 | Ssr1      | signal sequence receptor, alpha                                    | -0.7 | 1.9E-14 | 1319.5  | 7309.1 | 88  | 87  |
| ENSMUSG00000030201 | Lrp6      | low density lipoprotein receptor-related protein 6                 | -1.2 | 2.6E-57 | 469.4   | 7275.6 | 82  | 82  |
| ENSMUSG00000079037 | Prnp      | prion protein  | -0.1 | 6.6E-01 | 6202.1  | 7272.8 | 91  | 92  |
| ENSMUSG00000019818 | Cd164     | CD164 antigen  | -0.6 | 9.3E-06 | 1970.5  | 7260.8 | 97  | 98  |
| ENSMUSG00000035245 | Eogt      | EGF domain-specific O-linked N-acetylglucosamine (GlcNAc) tri      | -1.1 | 1.6E-58 | 578.0   | 7227.4 | 87  | 82  |
| ENSMUSG00000040848 | Sft2d2    | SFT2 domain containing 2   | -0.4 | 6.6E-03 | 2603.1  | 7221.2 | 95  | 90  |
| ENSMUSG00000031239 | Itm2a     | integral membrane protein 2A                                       | -1.8 | 4.0E-46 | 97.9    | 7183.2 | 88  | 94  |
| ENSMUSG00000031393 | Mecp2     | methyl CpG binding protein 2                                       | -0.3 | 1.1E-02 | 3850.5  | 7172.5 | 89  | 81  |
| ENSMUSG00000037062 | Sh3gbl1   | SH3-domain GRB2-like B1 (endophilin)                               | 0.0  | 7.1E-01 | 7745.1  | 7146.7 | 93  | 88  |
| ENSMUSG00000027763 | Mbnl1     | muscleblind-like 1 (Drosophila)                                    | -0.2 | 1.3E-02 | 4059.3  | 7138.9 | 98  | 95  |
| ENSMUSG00000027630 | Tbl1xr1   | transducin (beta)-like 1X-linked receptor 1                        | -0.3 | 5.7E-02 | 3528.1  | 7087.9 | 91  | 81  |
| ENSMUSG00000032199 | Polr2m    | polymerase (RNA) II (DNA directed) polypeptide M                   | -0.3 | 3.4E-02 | 3953.3  | 7085.5 | 96  | 94  |
| ENSMUSG00000023169 | Slc38a1   | solute carrier family 38, member 1                                 | -0.8 | 1.4E-13 | 1213.5  | 7065.9 | 83  | 80  |
| ENSMUSG00000005873 | Reep5     | receptor accessory protein 5                                       | -0.2 | 3.2E-02 | 4191.2  | 7065.0 | 96  | 97  |
| ENSMUSG00000034994 | Eef2      | eukaryotic translation elongation factor 2                         | -0.7 | 1.2E-08 | 1450.8  | 7058.3 | 88  | 87  |
| ENSMUSG00000055447 | Cd47      | CD47 antigen (Rh-related antigen, integrin-associated signal trans | -0.6 | 2.3E-16 | 1635.6  | 6907.5 | 95  | 93  |
| ENSMUSG00000008730 | Tmem170b  | transmembrane protein 170B   | -0.3 | 1.7E-01 | 3652.5  | 6870.2 | 97  | 90  |
| ENSMUSG00000034297 | Med13     | mediator complex subunit 13  | -0.1 | 3.6E-01 | 5275.9  | 6825.5 | 92  | 85  |
| ENSMUSG00000042444 | Fam63b    | family with sequence similarity 63, member B                       | 0.1  | 6.4E-01 | 8068.0  | 6788.5 | 89  | 86  |
| ENSMUSG00000036333 | Kidins220 | kinase D-interacting substrate 220                                 | -0.5 | 1.0E-14 | 1908.6  | 6686.3 | 92  | 91  |
| ENSMUSG00000032181 | Scg3      | secretogranin III  | -0.1 | 8.0E-01 | 5893.0  | 6634.9 | 100 | 100 |
| ENSMUSG00000067336 | Bmpr2     | bone morphogenetic protein receptor, type II (serine/threonine kin | -0.8 | 1.5E-16 | 1159.6  | 6595.4 | 95  | 91  |
| ENSMUSG00000019132 | BC005537  | cDNA sequence BC005537   | -0.1 | 6.1E-01 | 5066.2  | 6497.3 | 91  | 89  |
| ENSMUSG00000017466 | Timp2     | tissue inhibitor of metalloproteinase 2                            | -0.6 | 2.1E-07 | 1724.7  | 6463.8 | 84  | 82  |
| ENSMUSG00000027162 | Lin7c     | lin-7 homolog C (C, elegans)                                       | 0.1  | 4.4E-01 | 8580.9  | 6443.4 | 95  | 93  |
| ENSMUSG00000032050 | Rdx       | radixin  | -0.5 | 3.1E-14 | 1961.7  | 6408.0 | 84  | 80  |
| ENSMUSG00000027189 | Trim44    | tripartite motif-containing 44                                     | -0.1 | 6.4E-01 | 5688.5  | 6398.8 | 93  | 87  |
| ENSMUSG00000009569 | Mkl2      | MKL/myocardin-like 2   | -0.5 | 1.1E-16 | 1931.2  | 6374.7 | 93  | 86  |
| ENSMUSG00000018846 | Pank3     | pantothenate kinase 3  | -0.3 | 4.5E-02 | 3517.1  | 6373.8 | 92  | 88  |
| ENSMUSG00000027852 | Nras      | neuroblastoma ras oncogene   | -0.1 | 4.8E-01 | 5075.4  | 6320.2 | 91  | 81  |
| ENSMUSG00000022892 | App       | amyloid beta (A4) precursor protein                                | -0.8 | 4.0E-26 | 982.5   | 6270.6 | 96  | 96  |
| ENSMUSG00000035847 | Ids       | iduronate 2-sulfatase  | 0.0  | 9.3E-01 | 6077.3  | 6249.5 | 90  | 93  |
| ENSMUSG00000034088 | Hdlbp     | high density lipoprotein (HDL) binding protein                     | -0.5 | 2.3E-05 | 2190.9  | 6236.2 | 92  | 91  |
| ENSMUSG00000056602 | Fry       | furry homolog (Drosophila)   | -0.8 | 3.6E-15 | 986.7   | 6226.3 | 92  | 84  |
| ENSMUSG00000030235 | Slco1c1   | solute carrier organic anion transporter family, member 1c1        | -1.0 | 2.3E-28 | 587.7   | 6199.5 | 94  | 97  |
| ENSMUSG00000028382 | Ptbp3     | polypyrimidine tract binding protein 3                             | -0.9 | 1.3E-13 | 711.2   | 6194.9 | 88  | 83  |
| ENSMUSG00000025016 | Tm9sf3    | transmembrane 9 superfamily member 3                               | -0.7 | 3.3E-20 | 1315.5  | 6180.9 | 92  | 92  |
| ENSMUSG00000052387 | Trpm3     | transient receptor potential cation channel, subfamily M, member   | -0.9 | 6.6E-07 | 805.1   | 6110.3 | 84  | 89  |
| ENSMUSG00000055065 | Ddx17     | DEAD (Asp-Glu-Ala-Asp) box polypeptide 17                          | -0.1 | 3.4E-01 | 4717.6  | 6100.4 | 81  | 80  |
| ENSMUSG00000058655 | Eif4b     | eukaryotic translation initiation factor 4B                        | -0.8 | 4.9E-07 | 971.8   | 6036.9 | 85  | 86  |
| ENSMUSG00000050953 | Gja1      | gap junction protein, alpha 1                                      | 0.0  | 9.9E-01 | 6004.3  | 6027.7 | 98  | 95  |
| ENSMUSG00000032324 | Tspan3    | tetraspanin 3  | -0.2 | 7.4E-02 | 4109.3  | 6005.5 | 92  | 87  |
| ENSMUSG00000020580 | Rock2     | Rho-associated coiled-coil containing protein kinase 2             | -0.1 | 1.3E-01 | 4315.1  | 6003.7 | 88  | 89  |
| ENSMUSG00000030307 | Slc6a11   | solute carrier family 6 (neurotransmitter transporter, GABA), men  | -0.1 | 4.5E-01 | 4501.3  | 5999.1 | 91  | 89  |
| ENSMUSG00000058690 | Ceser2    | coiled-coil serine rich 2  | -0.3 | 6.5E-06 | 3292.6  | 5995.0 | 83  | 83  |
| ENSMUSG00000001089 | Luzp1     | leucine zipper protein 1   | -1.0 | 2.2E-18 | 613.0   | 5979.3 | 86  | 85  |
| ENSMUSG00000027002 | Nckap1    | NCK-associated protein 1   | 0.2  | 1.3E-03 | 10271.8 | 5964.9 | 85  | 81  |
| ENSMUSG00000041028 | Ghitm     | growth hormone inducible transmembrane protein                     | 0.4  | 4.4E-12 | 14552.9 | 5943.9 | 94  | 88  |
| ENSMUSG00000030306 | Tmtc1     | transmembrane and tetratricopeptide repeat containing 1            | -1.3 | 7.4E-40 | 278.6   | 5923.2 | 81  | 88  |
| ENSMUSG00000021488 | Nsd1      | nuclear receptor-binding SET-domain protein 1                      | -0.4 | 8.5E-09 | 2543.4  | 5770.9 | 89  | 86  |
| ENSMUSG00000022048 | Dpysl2    | dihydropyrimidinase-like 2   | 0.1  | 2.8E-01 | 7889.7  | 5698.3 | 93  | 88  |
| ENSMUSG00000027177 | Hipk3     | homeodomain interacting protein kinase 3                           | -0.7 | 6.3E-13 | 1013.8  | 5624.0 | 86  | 81  |
| ENSMUSG00000066150 | Slc31a1   | solute carrier family 31, member 1                                 | -0.8 | 6.5E-11 | 790.4   | 5603.2 | 84  | 87  |
| ENSMUSG00000041559 | Fmod      | fibromodulin   | -1.2 | 1.5E-15 | 361.4   | 5601.9 | 87  | 90  |
| ENSMUSG00000035805 | Mlc1      | megalencephalic leukoencephalopathy with subcortical cysts 1 ho    | -0.3 | 9.9E-02 | 2921.6  | 5582.5 | 88  | 80  |
| ENSMUSG00000001280 | Sp1       | trans-acting transcription factor 1                                | -0.6 | 3.8E-10 | 1491.2  | 5560.8 | 89  | 80  |
| ENSMUSG00000038370 | Pcp4h1    | Purkinje cell protein 4-like 1                                     | -0.4 | 1.6E-05 | 2091.2  | 5541.1 | 99  | 98  |
| ENSMUSG00000037815 | Ctnna1    | catenin (cadherin associated protein), alpha 1                     | -0.1 | 2.7E-01 | 4252.1  | 5534.2 | 95  | 90  |
| ENSMUSG00000033965 | Slc16a2   | solute carrier family 16 (monocarboxylic acid transporters), memt  | -1.4 | 8.1E-75 | 211.4   | 5504.6 | 89  | 92  |
| ENSMUSG00000021696 | Elov17    | ELOVL family member 7, elongation of long chain fatty acids (ye    | -1.7 | 5.2E-31 | 111.1   | 5486.7 | 83  | 91  |
| ENSMUSG00000032883 | Acs13     | acyl-CoA synthetase long-chain family member 3                     | 0.2  | 4.2E-01 | 7960.4  | 5410.4 | 82  | 83  |
| ENSMUSG00000021796 | Bmpr1a    | bone morphogenetic protein receptor, type 1A                       | -0.3 | 6.4E-04 | 2513.4  | 5409.2 | 86  | 81  |
| ENSMUSG00000028053 | Ash11     | ash1 (absent, small, or homeotic)-like (Drosophila)                | -0.1 | 3.2E-01 | 3828.9  | 5334.3 | 93  | 80  |
| ENSMUSG00000062014 | Gmfb      | glia maturation factor, beta                                       | 0.3  | 2.0E-01 | 9588.8  | 5328.8 | 90  | 91  |
| ENSMUSG00000032393 | Dpp8      | dipeptidylpeptidase 8  | -0.1 | 7.4E-01 | 4682.1  | 5294.1 | 94  | 93  |
| ENSMUSG00000022136 | Dnaj3     | DnaJ (Hsp40) homolog, subfamily C, member 3                        | -0.8 | 6.2E-15 | 756.1   | 5282.7 | 93  | 96  |
| ENSMUSG00000048578 | Mlec      | mlectin  | -0.8 | 5.3E-15 | 744.8   | 5243.2 | 93  | 90  |
| ENSMUSG00000030104 | Edem1     | ER degradation enhancer, mannosidase alpha-like 1                  | -1.4 | 1.3E-14 | 199.4   | 5241.9 | 83  | 81  |
| ENSMUSG00000020088 | Sar1a     | SAR1 gene homolog A (S, cerevisiae)                                | -0.1 | 6.3E-01 | 4610.0  | 5212.9 | 96  | 94  |
| ENSMUSG00000026219 | Trip12    | thyroid hormone receptor interactor 12                             | -0.3 | 2.8E-03 | 2821.2  | 5188.7 | 89  | 81  |
| ENSMUSG00000043252 | Tmem64    | transmembrane protein 64   | -0.8 | 5.1E-10 | 898.7   | 5174.4 | 87  | 86  |
| ENSMUSG00000032562 | Gnai2     | guanine nucleotide binding protein (G protein), alpha inhibiting 2 | -0.1 | 4.1E-01 | 3876.5  | 5137.6 | 95  | 92  |
| ENSMUSG00000038095 | Sbno1     | sno, strawberry notch homolog 1 (Drosophila)                       | -0.5 | 7.3E-08 | 1729.5  | 5110.8 | 95  | 88  |
| ENSMUSG00000021171 | Esy21     | extended synaptotagmin-like protein 2                              | -1.3 | 3.7E-82 | 229.4   | 5076.6 | 82  | 84  |
| ENSMUSG00000051510 | Mafg      | v-maf musculoaponeurotic fibrosarcoma oncogene family, protein     | -1.1 | 4.2E-09 | 365.0   | 5052.8 | 84  | 83  |
| ENSMUSG00000017009 | Sdc4      | syndecan 4   | 0.0  | 9.4E-01 | 5244.5  | 5023.7 | 90  | 92  |
| ENSMUSG00000047414 | Flrt2     | fibronectin leucine rich transmembrane protein 2                   | -1.1 | 4.5E-30 | 430.4   | 4944.6 | 88  | 88  |
| ENSMUSG00000052397 | Ezr       | ezrin  | -0.1 | 6.1E-01 | 3884.8  | 4942.1 | 86  | 85  |
| ENSMUSG00000020029 | Nudt4     | nudix (nucleoside diphosphate linked moiety X)-type motif 4        | -0.3 | 1.9E-03 | 2468.4  | 4919.7 | 84  | 83  |
| ENSMUSG00000025241 | Fyco1     | FYVE and coiled-coil domain containing 1                           | -0.9 | 1.3E-30 | 593.3   | 4900.7 | 80  | 84  |
| ENSMUSG00000029004 | Kmt2e     | lysine (K)-specific methyltransferase 2E                           | -0.1 | 1.1E-01 | 3480.1  | 4857.6 | 88  | 86  |
| ENSMUSG00000030218 | Mgp       | matrix Gla protein   | -1.7 | 6.5E-53 | 89.7    | 4856.2 | 94  | 97  |
| ENSMUSG00000030894 | Tpp1      | tripeptidyl peptidase 1  | -0.5 | 1.3E-06 | 1490.6  | 4848.4 | 96  | 92  |
| ENSMUSG00000003970 | Rpl8      | ribosomal protein L8   | -0.3 | 1.0E-01 | 2594.5  | 4821.2 | 93  | 91  |
| ENSMUSG00000024654 | Asrg11    | asparaginase like 1  | 0.8  | 4.7E-10 | 32853.6 | 4793.5 | 94  | 90  |
| ENSMUSG00000066568 | Lsm14a    | LSM14 homolog A (SCD6, S, cerevisiae)                              | -0.2 | 4.8E-02 | 3271.3  | 4772.7 | 89  | 88  |
| ENSMUSG00000013662 | Atad1     | ATPase family, AAA domain containing 1                             | -0.5 | 3.1E-04 | 1521.7  | 4759.6 | 96  | 90  |
| ENSMUSG00000032244 | Fem1b     | feminization 1 homolog b (C, elegans)                              | -0.1 | 5.0E-01 | 3667.8  | 4721.9 | 93  | 81  |
| ENSMUSG00000003131 | Pafah1b2  | platelet-activating factor acetylhydrolase, isoform 1b, subunit 2  | 0.2  | 2.8E-01 | 6937.1  | 4709.9 | 97  | 90  |
| ENSMUSG00000053279 | Aldh1a1   | aldehyde dehydrogenase family 1, subfamily A1                      | 0.7  | 7.8E-08 | 22006.8 | 4668.5 | 86  | 81  |
| ENSMUSG00000038615 | Nfe2l1    | nuclear factor, erythroid derived 2, -like 1                       | -0.6 | 2.0E-11 | 1096.1  | 4663.8 | 81  | 85  |
| ENSMUSG00000025931 | Pagr8     | progesterin and adipoQ receptor family member VIII                 | 0.1  | 6.7E-01 | 5568.4  | 4647.4 | 93  | 95  |

|                     |            |   |      |         |         |        |    |     |
|---------------------|------------|---|------|---------|---------|--------|----|-----|
| ENSMUSG00000030002  | Dusp11     | dual specificity phosphatase 11 (RNA/RNP complex 1-interacting)     | -0.4 | 6.3E-06 | 1660.6  | 4644.1 | 85 | 80  |
| ENSMUSG00000026112  | Coa5       | cytochrome C oxidase assembly factor 5                              | -0.1 | 7.5E-01 | 3913.8  | 4592.0 | 96 | 89  |
| ENSMUSG00000045092  | S1pr1      | sphingosine-1-phosphate receptor 1                                  | 0.4  | 1.6E-08 | 11517.0 | 4576.4 | 93 | 95  |
| ENSMUSG00000027808  | Serp1      | stress-associated endoplasmic reticulum protein 1                   | 0.1  | 6.0E-01 | 6199.7  | 4538.9 | 92 | 83  |
| ENSMUSG00000025809  | Itg1b      | integrin beta 1 (fibronectin receptor beta)                         | -1.1 | 1.6E-25 | 321.3   | 4474.7 | 81 | 86  |
| ENSMUSG00000028517  | Ppap2b     | phosphatidic acid phosphatase type 2B                               | 0.3  | 1.3E-01 | 8290.3  | 4453.2 | 94 | 94  |
| ENSMUSG00000065954  | Tacc1      | transforming, acidic coiled-coil containing protein 1               | -0.5 | 1.9E-06 | 1427.0  | 4432.9 | 88 | 89  |
| ENSMUSG00000074305  | C230081A13 | RIKEN cDNA C230081A13 gene  | -1.0 | 4.3E-34 | 424.1   | 4430.8 | 85 | 80  |
| ENSMUSG00000068747  | Sort1      | sortilin 1  | -0.6 | 7.2E-12 | 1177.3  | 4425.5 | 81 | 81  |
| ENSMUSG00000029571  | Tmem106b   | transmembrane protein 106B  | -0.2 | 1.6E-02 | 2592.8  | 4362.9 | 83 | 84  |
| ENSMUSG00000026424  | Gpr3711    | G protein-coupled receptor 37-like 1                                | 0.0  | 8.2E-01 | 4791.5  | 4347.7 | 93 | 88  |
| ENSMUSG00000034485  | Uaca       | uveal autoantigen with coiled-coil domains and ankyrin repeats      | -1.6 | 1.7E-68 | 104.6   | 4327.7 | 86 | 92  |
| ENSMUSG000000031592 | Pem1       | pericentriolar material 1   | -0.3 | 3.1E-02 | 2139.5  | 4313.4 | 90 | 88  |
| ENSMUSG00000057522  | Spop       | speckle-type POZ protein  | -0.7 | 1.6E-12 | 807.8   | 4280.0 | 90 | 89  |
| ENSMUSG00000037487  | Ubr5       | ubiquitin protein ligase E3 component n-recogin 5                   | -0.3 | 4.1E-04 | 1963.2  | 4273.7 | 88 | 84  |
| ENSMUSG00000027007  | Ssfa2      | sperm specific antigen 2  | -0.5 | 8.5E-08 | 1235.6  | 4237.7 | 80 | 80  |
| ENSMUSG00000029840  | Mtpn       | myotrophin  | 0.6  | 2.4E-07 | 16347.3 | 4233.5 | 91 | 87  |
| ENSMUSG00000005683  | Cs         | citrate synthase  | 0.5  | 5.7E-08 | 14756.3 | 4209.5 | 94 | 87  |
| ENSMUSG00000055204  | Ankrd17    | ankyrin repeat domain 17  | -0.2 | 5.7E-02 | 2417.7  | 4148.1 | 83 | 80  |
| ENSMUSG00000022016  | Akap11     | A kinase (PRKA) anchor protein 11                                   | -0.5 | 4.0E-06 | 1285.9  | 4117.4 | 85 | 83  |
| ENSMUSG00000020340  | Cyfp2      | cytoplasmic FMR1 interacting protein 2                              | -0.1 | 5.7E-01 | 3597.6  | 4117.0 | 83 | 80  |
| ENSMUSG00000004364  | Cul3       | cullin 3  | 0.2  | 1.8E-02 | 7244.3  | 4112.9 | 88 | 82  |
| ENSMUSG00000019873  | Reep3      | receptor accessory protein 3  | -0.7 | 9.7E-08 | 881.4   | 4109.9 | 80 | 81  |
| ENSMUSG00000031924  | Cyb5b      | cytochrome b5 type B  | 0.2  | 9.9E-02 | 7002.0  | 4088.5 | 96 | 91  |
| ENSMUSG00000031532  | Tmem66     | transmembrane protein 66  | -0.5 | 4.0E-06 | 1204.6  | 4077.5 | 86 | 87  |
| ENSMUSG00000000346  | Dazap2     | DAZ associated protein 2  | 0.7  | 3.5E-15 | 18399.1 | 4076.0 | 86 | 86  |
| ENSMUSG00000005534  | Insr       | insulin receptor  | -1.0 | 2.1E-14 | 389.8   | 4052.4 | 82 | 83  |
| ENSMUSG00000022462  | Slc38a2    | solute carrier family 38, member 2                                  | -0.7 | 1.9E-22 | 737.9   | 4040.0 | 93 | 91  |
| ENSMUSG00000041417  | Pik3r1     | phosphatidylinositol 3-kinase, regulatory subunit, polypeptide 1 (p | 0.2  | 8.6E-02 | 6524.1  | 4037.3 | 89 | 81  |
| ENSMUSG00000035133  | Arhgap5    | Rho GTPase activating protein 5                                     | 0.5  | 2.5E-06 | 13159.9 | 4027.6 | 95 | 95  |
| ENSMUSG00000037325  | Lmbrd1     | LMBR1 domain containing 1   | -0.6 | 5.4E-06 | 1001.3  | 4012.3 | 93 | 90  |
| ENSMUSG00000066324  | Impad1     | inositol monophosphatase domain containing 1                        | -0.4 | 5.0E-03 | 1613.4  | 4006.1 | 88 | 85  |
| ENSMUSG00000038530  | Rgs4       | regulator of G-protein signaling 4                                  | -0.3 | 2.8E-03 | 1890.3  | 3987.3 | 91 | 90  |
| ENSMUSG00000032340  | Neol       | neogenin  | -0.7 | 5.5E-14 | 822.3   | 3957.4 | 82 | 82  |
| ENSMUSG00000032549  | Rab6b      | RAB6B, member RAS oncogene family                                   | 0.4  | 9.1E-05 | 9514.9  | 3944.0 | 95 | 86  |
| ENSMUSG00000024098  | Twsg1      | twisted gastrulation homolog 1 (Drosophila)                         | -0.8 | 3.2E-13 | 552.9   | 3920.4 | 92 | 90  |
| ENSMUSG00000019929  | Dcn        | decorin   | -1.5 | 3.6E-44 | 130.2   | 3894.4 | 88 | 90  |
| ENSMUSG00000021390  | Ogn        | osteolectin   | -1.2 | 2.0E-26 | 242.4   | 3843.7 | 99 | 100 |
| ENSMUSG00000034707  | Gns        | glucosamine (N-acetyl)-6-sulfatase                                  | -1.0 | 3.0E-42 | 423.5   | 3812.9 | 90 | 91  |
| ENSMUSG00000038481  | Cdk19      | cyclin-dependent kinase 19  | -0.2 | 1.0E-01 | 2162.2  | 3783.8 | 91 | 84  |
| ENSMUSG00000022122  | Ednrb      | endothelin receptor type B  | -0.2 | 3.3E-01 | 2522.2  | 3775.8 | 95 | 95  |
| ENSMUSG00000033629  | Ptplad1    | protein tyrosine phosphatase-like A domain containing 1             | -0.1 | 5.2E-01 | 2718.1  | 3725.3 | 91 | 91  |
| ENSMUSG00000021477  | Ctsl       | cathepsin L   | -0.5 | 1.2E-05 | 1211.4  | 3721.5 | 89 | 96  |
| ENSMUSG00000025130  | P4hb       | prolyl 4-hydroxylase, beta polypeptide                              | -0.9 | 7.1E-16 | 499.5   | 3716.4 | 84 | 85  |
| ENSMUSG00000039952  | Dag1       | dystroglycan 1  | -0.7 | 2.7E-19 | 724.3   | 3714.6 | 88 | 85  |
| ENSMUSG00000089774  | Slc5a3     | solute carrier family 5 (inositol transporters), member 3           | -1.0 | 6.3E-14 | 336.1   | 3686.4 | 80 | 86  |
| ENSMUSG00000024302  | Dtna       | dystrobrevin alpha  | 0.5  | 5.5E-04 | 12433.5 | 3672.6 | 89 | 84  |
| ENSMUSG00000029238  | Clock      | circadian locomotor output cycles kaput                             | -0.3 | 8.2E-03 | 1714.9  | 3663.0 | 91 | 85  |
| ENSMUSG00000025982  | Sf3b1      | splicing factor 3b, subunit 1                                       | -0.2 | 1.4E-01 | 2234.6  | 3642.9 | 93 | 89  |
| ENSMUSG00000024782  | Ak3        | adenylylate kinase 3  | 0.5  | 7.9E-06 | 12425.5 | 3638.7 | 91 | 94  |
| ENSMUSG00000023150  | Ivns1labp  | influenza virus NS1A binding protein                                | 0.0  | 7.9E-01 | 3275.2  | 3616.9 | 89 | 83  |
| ENSMUSG00000037712  | Fermt2     | fermitin family homolog 2 (Drosophila)                              | 0.4  | 2.3E-07 | 10181.4 | 3600.2 | 84 | 83  |
| ENSMUSG00000074994  | Qser1      | glutamine and serine rich 1   | -0.6 | 1.8E-08 | 904.0   | 3598.8 | 91 | 82  |
| ENSMUSG00000021978  | Extl3      | exostosins (multiple)-like 3  | -0.5 | 4.6E-29 | 1086.4  | 3581.0 | 88 | 87  |
| ENSMUSG00000021366  | Hivep1     | human immunodeficiency virus type I enhancer binding protein 1      | -0.5 | 2.0E-07 | 1089.7  | 3567.7 | 84 | 83  |
| ENSMUSG00000031751  | Amfr       | autocrine motility factor receptor                                  | -0.5 | 2.9E-13 | 1058.7  | 3531.5 | 80 | 82  |
| ENSMUSG00000034160  | Ogt        | O-linked N-acetylglucosamine (GlcNAc) transferase (UDP-N-ac         | -0.5 | 7.9E-04 | 1172.2  | 3526.8 | 82 | 87  |
| ENSMUSG00000040010  | Slc7a5     | solute carrier family 7 (cationic amino acid transporter, y+ system | -1.1 | 1.1E-21 | 266.2   | 3505.4 | 83 | 80  |
| ENSMUSG00000017776  | Crk        | v-crk sarcoma virus CT10 oncogene homolog (avian)                   | 0.2  | 5.1E-02 | 5431.6  | 3505.4 | 85 | 85  |
| ENSMUSG00000019966  | Kitl       | kit ligand  | -1.2 | 5.6E-21 | 213.5   | 3503.9 | 85 | 86  |
| ENSMUSG00000020423  | Btg2       | B cell translocation gene 2, anti-proliferative                     | -1.2 | 1.9E-10 | 202.3   | 3502.8 | 94 | 91  |
| ENSMUSG00000024900  | Cpt1a      | camitine palmitoyltransferase 1a, liver                             | -0.2 | 1.4E-01 | 2044.8  | 3470.1 | 84 | 80  |
| ENSMUSG00000038708  | Golga4     | golgi autoantigen, golgin subfamily a, 4                            | -0.6 | 2.1E-08 | 770.0   | 3447.5 | 91 | 88  |
| ENSMUSG00000020591  | Ntsr2      | neurotensin receptor 2  | 0.1  | 3.2E-01 | 4863.2  | 3446.9 | 89 | 81  |
| ENSMUSG00000027962  | Vcam1      | vascular cell adhesion molecule 1                                   | -0.5 | 3.1E-04 | 1210.7  | 3445.6 | 89 | 90  |
| ENSMUSG00000021027  | Ralgap1    | Ral GTPase activating protein, alpha subunit 1                      | -0.5 | 9.0E-05 | 985.3   | 3443.3 | 88 | 88  |
| ENSMUSG00000030536  | Iqgap1     | IQ motif containing GTPase activating protein 1                     | -1.3 | 7.8E-93 | 164.3   | 3442.2 | 84 | 83  |
| ENSMUSG00000048388  | Fam171b    | family with sequence similarity 171, member B                       | 0.3  | 1.3E-02 | 7150.0  | 3407.0 | 89 | 88  |
| ENSMUSG00000021709  | Erb2ip     | ErbB2 interacting protein   | -0.1 | 6.2E-01 | 2943.6  | 3392.3 | 89 | 85  |
| ENSMUSG00000060657  | Marf1      | meiosis arrest female 1   | -0.4 | 2.0E-05 | 1273.1  | 3391.3 | 92 | 80  |
| ENSMUSG00000026782  | Abi2       | abl-interactor 2  | 0.1  | 9.1E-02 | 4699.8  | 3363.2 | 93 | 88  |
| ENSMUSG00000074746  | Pdzd8      | PDZ domain containing 8   | -0.7 | 2.2E-15 | 629.0   | 3353.7 | 82 | 82  |
| ENSMUSG00000045767  | B230219D22 | RIKEN cDNA B230219D22 gene  | -0.1 | 3.7E-01 | 2531.7  | 3351.5 | 93 | 87  |
| ENSMUSG00000025810  | Nrp1       | neuropilin 1  | -1.3 | 1.9E-24 | 175.1   | 3314.1 | 85 | 86  |
| ENSMUSG00000021669  | Col4a3bp   | collagen, type IV, alpha 3 (Goodpasture antigen) binding protein    | -0.5 | 9.2E-20 | 1023.4  | 3291.8 | 89 | 81  |
| ENSMUSG00000068566  | Myadm      | myeloid-associated differentiation marker                           | -1.1 | 8.4E-45 | 239.3   | 3274.6 | 86 | 88  |
| ENSMUSG00000039361  | Picalm     | phosphatidylinositol binding clathrin assembly protein              | -0.1 | 5.2E-01 | 2805.4  | 3271.1 | 90 | 87  |
| ENSMUSG00000034024  | Cct2       | chaperonin containing Tcp1, subunit 2 (beta)                        | -0.1 | NA      | 2345.3  | 3262.1 | 99 | 95  |
| ENSMUSG00000026421  | Csrp1      | cysteine and glycine-rich protein 1                                 | 0.8  | 5.8E-14 | 21212.6 | 3253.9 | 87 | 85  |
| ENSMUSG00000050912  | Tmem123    | transmembrane protein 123   | -1.2 | 4.6E-36 | 218.5   | 3249.1 | 83 | 89  |
| ENSMUSG00000038014  | Fam120a    | family with sequence similarity 120, member A                       | 0.0  | 1.0E+00 | 3201.8  | 3210.9 | 86 | 80  |
| ENSMUSG00000031980  | Agt        | angiotensinogen (serpin peptidase inhibitor, clade A, member 8)     | -0.6 | 5.0E-04 | 771.1   | 3194.0 | 95 | 97  |
| ENSMUSG00000020326  | Ccng1      | cyclin G1   | 0.2  | 3.2E-01 | 4880.7  | 3190.6 | 96 | 85  |
| ENSMUSG00000067818  | My19       | myosin, light polypeptide 9, regulatory                             | -1.0 | 1.8E-17 | 319.2   | 3190.4 | 96 | 94  |
| ENSMUSG00000039959  | Hip1       | huntingtin interacting protein 1                                    | -0.3 | 1.4E-06 | 1644.3  | 3154.2 | 84 | 83  |
| ENSMUSG00000020572  | Nampt      | nicotinamide phosphoribosyltransferase                              | -0.4 | 2.6E-15 | 1243.9  | 3152.2 | 83 | 82  |
| ENSMUSG00000027803  | Wwtr1      | WW domain containing transcription regulator 1                      | 0.0  | 9.0E-01 | 3246.9  | 3147.5 | 92 | 88  |
| ENSMUSG00000020850  | Pripf8     | pre-mRNA processing factor 8  | -0.2 | 2.1E-02 | 2056.9  | 3101.1 | 92 | 83  |
| ENSMUSG00000004980  | Hnrnpa2b1  | heterogeneous nuclear ribonucleoprotein A2/B1                       | 0.3  | 9.4E-04 | 5802.8  | 3093.4 | 84 | 82  |
| ENSMUSG00000031538  | Plat       | plasminogen activator, tissue                                       | -1.4 | 5.1E-22 | 106.2   | 3072.2 | 85 | 89  |
| ENSMUSG00000000078  | Klf6       | Kruppel-like factor 6   | -0.3 | 1.9E-02 | 1448.0  | 3069.7 | 91 | 85  |
| ENSMUSG00000031703  | Irfg1      | integrin alpha FG-GAP repeat containing 1                           | -0.4 | 1.5E-04 | 1219.1  | 3060.0 | 90 | 88  |
| ENSMUSG00000031785  | Gpr56      | G protein-coupled receptor 56                                       | -0.5 | 3.8E-07 | 1042.5  | 3013.2 | 87 | 88  |
| ENSMUSG00000017615  | Tnfrsf1    | tumor necrosis factor, alpha-induced protein 1 (endothelial)        | -0.1 | 4.5E-01 | 2236.5  | 3000.0 | 90 | 85  |
| ENSMUSG00000096054  | Syne1      | spectrin repeat containing, nuclear envelope 1                      | -0.8 | 2.4E-12 | 468.6   | 2987.8 | 89 | 83  |

|                     |            |  |      |         |         |        |    |     |
|---------------------|------------|--|------|---------|---------|--------|----|-----|
| ENSMUSG00000019699  | Akt3       | thymoma viral proto-oncogene 3                                       | 0.0  | 9.5E-01 | 3039.4  | 2982.7 | 92 | 86  |
| ENSMUSG00000020671  | Rab10      | RAB10, member RAS oncogene family                                    | 0.6  | 7.6E-08 | 11448.9 | 2978.9 | 87 | 82  |
| ENSMUSG00000015749  | Anp32e     | acidic (leucine-rich) nuclear phosphoprotein 32 family, member E     | 0.2  | 3.5E-02 | 4909.3  | 2978.6 | 82 | 86  |
| ENSMUSG00000039967  | Zfp292     | zinc finger protein 292  | -0.5 | 7.6E-07 | 1041.6  | 2973.5 | 89 | 80  |
| ENSMUSG00000019978  | Epb4.112   | erythrocyte protein band 4, 1-like 2                                 | 0.2  | 1.9E-02 | 4449.2  | 2968.6 | 88 | 89  |
| ENSMUSG0000000316   | Glg1       | golgi apparatus protein 1  | -0.7 | 5.0E-14 | 604.2   | 2955.7 | 86 | 84  |
| ENSMUSG00000022141  | Nipbl      | Nipped-B homolog (Drosophila)  | -0.4 | 1.3E-04 | 1289.2  | 2945.9 | 89 | 84  |
| ENSMUSG00000020954  | Strn3      | striatin, calmodulin binding protein 3                               | 0.1  | 1.6E-01 | 4004.9  | 2942.4 | 86 | 82  |
| ENSMUSG00000021484  | Lman2      | lectin, mannose-binding 2  | -0.6 | 2.2E-26 | 730.3   | 2939.8 | 90 | 84  |
| ENSMUSG00000021728  | Emb        | embigin  | -1.3 | 3.8E-09 | 136.4   | 2938.3 | 85 | 92  |
| ENSMUSG00000022200  | Golph3     | golgi phosphoprotein 3   | 0.4  | 3.3E-04 | 7296.1  | 2935.3 | 89 | 85  |
| ENSMUSG00000027712  | Anxa5      | annexin A5   | 0.3  | 3.8E-02 | 5382.8  | 2932.7 | 89 | 88  |
| ENSMUSG000000031246 | Sh3bgr1    | SH3-binding domain glutamic acid-rich protein like                   | 0.1  | 1.6E-01 | 4075.9  | 2925.2 | 83 | 87  |
| ENSMUSG00000056211  | R3hdm1     | R3H domain containing 1  | -0.1 | 5.6E-01 | 2343.0  | 2915.3 | 93 | 94  |
| ENSMUSG00000027562  | Car2       | carbonic anhydrase 2   | 1.0  | 4.5E-09 | 27630.9 | 2905.8 | 87 | 88  |
| ENSMUSG00000003226  | Ranbp2     | RAN binding protein 2  | -0.4 | 7.4E-05 | 1060.3  | 2882.9 | 88 | 87  |
| ENSMUSG00000020598  | Nrcam      | neuron-glia-CAM-related cell adhesion molecule                       | -0.3 | 7.8E-03 | 1416.6  | 2876.4 | 85 | 82  |
| ENSMUSG00000006373  | Pgrmc1     | progesterone receptor membrane component 1                           | -0.7 | 9.2E-15 | 522.5   | 2870.2 | 87 | 91  |
| ENSMUSG00000024603  | Dctn4      | dynactin 4   | 0.4  | 1.4E-03 | 6539.6  | 2847.1 | 96 | 83  |
| ENSMUSG00000024290  | Rock1      | Rho-associated coiled-coil containing protein kinase 1               | -0.4 | 1.9E-05 | 1010.2  | 2799.2 | 88 | 82  |
| ENSMUSG00000015501  | Hivp2      | human immunodeficiency virus type 1 enhancer binding protein 2       | -0.3 | 1.9E-03 | 1307.5  | 2798.6 | 85 | 81  |
| ENSMUSG00000022521  | Crebbp     | CREB binding protein   | -0.4 | 4.3E-03 | 1151.8  | 2781.0 | 89 | 81  |
| ENSMUSG00000025935  | Tram1      | translocating chain-associating membrane protein 1                   | -0.8 | 3.7E-17 | 423.0   | 2749.8 | 93 | 97  |
| ENSMUSG00000024533  | Spire1     | spire homolog 1 (Drosophila)   | 0.6  | 1.6E-07 | 10374.2 | 2730.4 | 86 | 84  |
| ENSMUSG000000000001 | Gnai3      | guanine nucleotide binding protein (G protein), alpha inhibiting 3   | 0.1  | 4.4E-01 | 3397.2  | 2729.6 | 94 | 89  |
| ENSMUSG00000022314  | Rad21      | RAD21 homolog (S. pombe)   | 0.1  | 1.3E-01 | 3505.3  | 2705.6 | 89 | 88  |
| ENSMUSG000000031701 | Dnaj2      | DnaJ (Hsp40) homolog, subfamily A, member 2                          | 0.3  | 1.1E-01 | 5482.8  | 2701.6 | 98 | 93  |
| ENSMUSG00000009390  | Hmgcs1     | 3-hydroxy-3-methylglutaryl-Coenzyme A synthase 1                     | 0.5  | 4.4E-06 | 8801.1  | 2668.6 | 88 | 81  |
| ENSMUSG00000037608  | Belaf1     | BCL2-associated transcription factor 1                               | 0.3  | 1.2E-02 | 5373.5  | 2645.9 | 89 | 84  |
| ENSMUSG00000007476  | Lrre8a     | leucine rich repeat containing 8A                                    | -0.4 | 4.3E-06 | 1076.1  | 2611.2 | 87 | 80  |
| ENSMUSG00000035770  | Dync1l2    | dynein, cytoplasmic 1 light intermediate chain 2                     | 0.1  | 4.0E-01 | 3229.0  | 2603.3 | 86 | 83  |
| ENSMUSG00000037236  | Matr3      | matrin 3   | -0.1 | 6.9E-01 | 2280.8  | 2590.1 | 88 | 80  |
| ENSMUSG00000060510  | Zfp266     | zinc finger protein 266  | -0.1 | NA      | 1931.5  | 2587.6 | 90 | 86  |
| ENSMUSG00000001472  | Trf25      | transcription factor 25 (basic helix-loop-helix)                     | 0.3  | 1.2E-02 | 4924.8  | 2568.3 | 96 | 82  |
| ENSMUSG00000054408  | Spec3      | signal peptidase complex subunit 3 homolog (S. cerevisiae)           | -0.6 | 4.0E-15 | 655.1   | 2563.8 | 97 | 95  |
| ENSMUSG00000023960  | Enpp5      | ectonucleotide pyrophosphatase/phosphodiesterase 5                   | -0.4 | 1.2E-02 | 1062.4  | 2561.9 | 90 | 91  |
| ENSMUSG00000030245  | Golt1b     | golgi transport 1 homolog B (S. cerevisiae)                          | -0.8 | 2.3E-04 | 352.9   | 2551.0 | 95 | 80  |
| ENSMUSG00000058587  | Tmod3      | tropomodulin 3   | -0.3 | 1.8E-03 | 1239.7  | 2530.8 | 94 | 91  |
| ENSMUSG00000029461  | Fam168a    | Fam1 with sequence similarity 168, member A                          | 0.4  | 8.0E-04 | 6118.9  | 2525.7 | 86 | 81  |
| ENSMUSG00000054008  | Ndst1      | N-deacetylase/N-sulfotransferase (heparan glucosaminyl) 1            | -0.7 | 3.2E-07 | 477.1   | 2498.4 | 92 | 85  |
| ENSMUSG00000064210  | Amo6       | anoctamin 6  | -1.0 | 1.9E-31 | 229.7   | 2479.4 | 82 | 84  |
| ENSMUSG00000030016  | Zfml       | zinc finger, matrin-like   | 0.3  | 3.6E-02 | 4430.8  | 2476.6 | 90 | 80  |
| ENSMUSG00000022261  | Sdc2       | syndecan 2   | -0.3 | 7.4E-04 | 1159.2  | 2447.3 | 92 | 89  |
| ENSMUSG00000020300  | Cpeb4      | cytoplasmic polyadenylation element binding protein 4                | 0.3  | 2.5E-02 | 4433.8  | 2439.5 | 88 | 80  |
| ENSMUSG00000023845  | Lnpep      | leucyl/cystinyl aminopeptidase                                       | -0.7 | 3.8E-07 | 520.5   | 2427.9 | 95 | 87  |
| ENSMUSG00000029178  | Klf3       | Kruppel-like factor 3 (basic)  | -0.2 | 2.2E-01 | 1653.3  | 2412.5 | 82 | 84  |
| ENSMUSG00000024350  | Dnajc18    | DnaJ (Hsp40) homolog, subfamily C, member 18                         | -0.1 | 4.2E-01 | 1945.8  | 2408.4 | 92 | 90  |
| ENSMUSG00000037119  | D15Erd21c  | DNA segment, Chr 15, ERATO Doi 621, expressed                        | 0.1  | 3.7E-01 | 3051.2  | 2408.4 | 89 | 80  |
| ENSMUSG00000022139  | Mbnl2      | muscleblind-like 2   | 0.3  | 2.7E-04 | 4856.8  | 2396.0 | 93 | 93  |
| ENSMUSG00000024712  | Rfk        | riboflavin kinase  | 0.2  | 3.3E-02 | 3822.1  | 2385.3 | 86 | 87  |
| ENSMUSG00000024665  | Fads2      | fatty acid desaturase 2  | -0.4 | 1.5E-03 | 948.4   | 2383.5 | 97 | 100 |
| ENSMUSG00000026393  | Nek7       | NIMA (never in mitosis gene a)-related expressed kinase 7            | 0.1  | 6.9E-01 | 2857.4  | 2375.1 | 93 | 89  |
| ENSMUSG00000028277  | Ube2j1     | ubiquitin-conjugating enzyme E2J 1                                   | 0.0  | 9.1E-01 | 2552.0  | 2372.5 | 94 | 83  |
| ENSMUSG00000031639  | Tlr3       | tol-like receptor 3  | -0.3 | 8.2E-02 | 1230.0  | 2372.2 | 90 | 87  |
| ENSMUSG00000031983  | 2310022B05 | RIKEN cDNA 2310022B05 gene   | 0.7  | 6.3E-10 | 12555.7 | 2370.2 | 87 | 81  |
| ENSMUSG00000024083  | Pja2       | praja 2, RING-H2 motif containing                                    | 0.1  | 5.3E-01 | 2646.1  | 2355.8 | 89 | 81  |
| ENSMUSG00000024423  | Impact     | imprinted and ancient  | 0.3  | 1.6E-01 | 4438.1  | 2353.2 | 95 | 88  |
| ENSMUSG00000031451  | Gasf6      | growth arrest specific 6   | -0.9 | 7.1E-16 | 280.3   | 2344.2 | 87 | 89  |
| ENSMUSG00000053094  | Tmem248    | transmembrane protein 248  | -0.9 | 4.5E-12 | 320.4   | 2332.2 | 83 | 80  |
| ENSMUSG00000040731  | Eif4h      | eukaryotic translation initiation factor 4H                          | 0.3  | 7.4E-05 | 4166.8  | 2330.2 | 89 | 80  |
| ENSMUSG00000022505  | Emp2       | epithelial membrane protein 2  | -0.6 | 3.2E-12 | 533.1   | 2329.2 | 87 | 84  |
| ENSMUSG00000040021  | Lats1      | large tumor suppressor   | 0.0  | 7.5E-01 | 2602.4  | 2325.6 | 86 | 83  |
| ENSMUSG00000041935  | AW549877   | expressed sequence AW549877  | 0.3  | 1.5E-01 | 4297.9  | 2321.8 | 96 | 84  |
| ENSMUSG00000030605  | Mfge8      | milk fat globule-EGF factor 8 protein                                | 0.0  | 9.5E-01 | 2261.7  | 2319.9 | 86 | 81  |
| ENSMUSG00000054459  | Vsnl1      | visinin-like 1   | 0.6  | 7.3E-08 | 8745.3  | 2309.2 | 97 | 82  |
| ENSMUSG00000038975  | Rabggtb    | RAB geranylgeranyl transferase, b subunit                            | 0.1  | 7.1E-01 | 2787.7  | 2304.8 | 83 | 81  |
| ENSMUSG00000060450  | Rnf14      | ring finger protein 14   | 0.4  | 1.7E-03 | 5589.4  | 2286.4 | 84 | 81  |
| ENSMUSG00000040289  | Hey1       | hairly/enhancer-of-split related with YRPW motif 1                   | 0.5  | 4.6E-03 | 7644.0  | 2276.3 | 90 | 80  |
| ENSMUSG00000025132  | Arhgdia    | Rho GDP dissociation inhibitor (GDI) alpha                           | 0.3  | 2.0E-03 | 5103.8  | 2272.8 | 86 | 80  |
| ENSMUSG00000021843  | Ktn1       | kinectin 1   | -0.7 | 1.1E-09 | 485.3   | 2266.0 | 87 | 85  |
| ENSMUSG00000024650  | Slc22a6    | solute carrier family 22 (organic anion transporter), member 6       | -1.1 | 2.4E-16 | 155.1   | 2257.5 | 87 | 85  |
| ENSMUSG00000022228  | Zscan26    | zinc finger and SCAN domain containing 26                            | -0.2 | 1.1E-01 | 1313.5  | 2227.7 | 87 | 80  |
| ENSMUSG00000026353  | Ubxn4      | UBX domain protein 4   | -0.1 | 6.5E-01 | 1883.1  | 2221.1 | 86 | 83  |
| ENSMUSG00000069874  | Irgm2      | immunity-related GTPase family M member 2                            | -1.0 | 1.4E-17 | 206.8   | 2215.9 | 85 | 84  |
| ENSMUSG00000030934  | Oat        | ornithine aminotransferase   | 0.6  | 4.7E-04 | 8101.6  | 2194.5 | 88 | 85  |
| ENSMUSG00000033998  | Kenk1      | potassium channel, subfamily K, member 1                             | 0.2  | 1.9E-01 | 3532.3  | 2194.4 | 85 | 85  |
| ENSMUSG00000026615  | Eprs       | glutamyl-prolyl-tRNA synthetase                                      | 0.2  | 1.6E-01 | 3199.6  | 2178.7 | 93 | 85  |
| ENSMUSG00000022564  | Grina      | glutamate receptor, ionotropic, N-methyl D-aspartate-associated p    | 0.1  | 5.0E-01 | 2895.8  | 2144.8 | 88 | 92  |
| ENSMUSG00000030660  | Pik3c2a    | phosphatidylinositol 3-kinase, C2 domain containing, alpha polyp     | -0.3 | 3.1E-05 | 1054.7  | 2134.5 | 83 | 82  |
| ENSMUSG00000033981  | Gria2      | glutamate receptor, ionotropic, AMPA2 (alpha 2)                      | 0.0  | 9.8E-01 | 2110.8  | 2133.0 | 87 | 85  |
| ENSMUSG00000028698  | Pik3r3     | phosphatidylinositol 3 kinase, regulatory subunit, polypeptide 3 (p  | -0.4 | 2.3E-13 | 794.9   | 2124.2 | 87 | 84  |
| ENSMUSG00000059336  | Slc14a1    | solute carrier family 14 (urea transporter), member 1                | -0.3 | 1.1E-01 | 1161.6  | 2122.5 | 84 | 85  |
| ENSMUSG00000031902  | Nfatc3     | nuclear factor of activated T cells, cytoplasmic, calcineurin depend | -0.5 | 3.2E-04 | 736.4   | 2102.8 | 89 | 80  |
| ENSMUSG00000033208  | S100b      | S100 protein, beta polypeptide, neural                               | 1.1  | 2.7E-12 | 25217.0 | 2100.7 | 94 | 96  |
| ENSMUSG00000024587  | Nars       | asparaginyl-tRNA synthetase  | 0.2  | 9.4E-02 | 3174.0  | 2100.3 | 97 | 91  |
| ENSMUSG00000024583  | Txn1l      | thioredoxin-like 1   | 0.2  | 3.0E-01 | 3377.7  | 2098.0 | 92 | 86  |
| ENSMUSG00000018377  | Vezf1      | vascular endothelial zinc finger 1                                   | 0.2  | 1.9E-01 | 3598.6  | 2097.0 | 87 | 83  |
| ENSMUSG00000035237  | Lcat       | lecithin cholesterol acyltransferase                                 | -0.3 | 7.4E-03 | 1094.5  | 2075.4 | 98 | 98  |
| ENSMUSG00000005533  | Igf1r      | insulin-like growth factor I receptor                                | -1.3 | 1.2E-28 | 99.9    | 2069.1 | 84 | 81  |
| ENSMUSG00000026374  | Tsn        | translin   | 0.0  | 8.0E-01 | 2292.4  | 2065.8 | 95 | 91  |
| ENSMUSG00000039542  | Ncam1      | neural cell adhesion molecule 1                                      | -0.5 | 6.3E-05 | 666.7   | 2049.1 | 88 | 87  |
| ENSMUSG00000025492  | Ifitm3     | interferon induced transmembrane protein 3                           | -0.9 | 1.1E-16 | 248.9   | 2021.7 | 88 | 89  |
| ENSMUSG00000052681  | Rap1b      | RAS related protein 1b   | 0.0  | 8.0E-01 | 1862.4  | 2017.6 | 92 | 86  |
| ENSMUSG00000036503  | Rnf13      | ring finger protein 13   | -0.2 | 1.8E-01 | 1314.9  | 2013.6 | 94 | 98  |
| ENSMUSG00000023915  | Tnfrsf21   | tumor necrosis factor receptor superfamily, member 21                | -0.8 | 3.2E-11 | 344.2   | 2007.1 | 82 | 82  |

|                     |            |   |       |         |         |        |    |     |
|---------------------|------------|---|-------|---------|---------|--------|----|-----|
| ENSMUSG00000037235  | Mxd4       | Max dimerization protein 4  | 0.2   | 1.6E-03 | 3467.8  | 1999.9 | 87 | 81  |
| ENSMUSG00000025373  | Rnf41      | ring finger protein 41  | -0.4  | 7.1E-02 | 848.7   | 1994.3 | 91 | 80  |
| ENSMUSG00000041702  | Btb7       | BTB (POZ) domain containing 7   | -0.7  | 1.2E-06 | 404.3   | 1991.4 | 87 | 82  |
| ENSMUSG00000030105  | Arl8b      | ADP-ribosylation factor-like 8B                                       | 0.5   | 1.9E-04 | 5646.1  | 1980.3 | 93 | 89  |
| ENSMUSG00000001833  | Sept7      | septin 7  | 0.5   | 6.7E-15 | 6991.4  | 1976.5 | 90 | 88  |
| ENSMUSG00000031839  | Hsbp1      | heat shock factor binding protein 1                                   | 0.6   | 4.8E-04 | 7662.6  | 1971.7 | 97 | 100 |
| ENSMUSG00000046352  | Gjb2       | gap junction protein, beta 2  | -0.6  | 2.6E-05 | 463.2   | 1968.6 | 92 | 87  |
| ENSMUSG00000037656  | Slc20a2    | solute carrier family 20, member 2                                    | -0.6  | 6.1E-07 | 533.3   | 1968.2 | 85 | 84  |
| ENSMUSG00000026051  | 1500015O10 | RIKEN cDNA 1500015O10 gene  | -1.4  | 1.8E-08 | 64.6    | 1955.6 | 84 | 93  |
| ENSMUSG00000020664  | Did        | dihydropyrimidine dehydrogenase                                       | 0.4   | 1.5E-02 | 4565.3  | 1950.9 | 92 | 94  |
| ENSMUSG00000039601  | Recan2     | regulator of calcineurin 2  | 0.4   | 2.4E-10 | 4495.9  | 1946.7 | 85 | 81  |
| ENSMUSG00000024491  | Rbm27      | RNA binding motif protein 27  | -0.1  | 7.5E-01 | 1689.6  | 1941.2 | 86 | 81  |
| ENSMUSG00000027303  | Ptpra      | protein tyrosine phosphatase, receptor type, A                        | -0.4  | 2.7E-08 | 833.7   | 1935.1 | 86 | 87  |
| ENSMUSG00000072704  | 2700089E24 | RIKEN cDNA 2700089E24 gene  | 0.0   | 8.0E-01 | 2145.7  | 1921.6 | 90 | 90  |
| ENSMUSG00000024474  | Ik         | IK cytokine   | 0.2   | 8.0E-02 | 3218.8  | 1886.9 | 88 | 88  |
| ENSMUSG00000021112  | Mpp5       | membrane protein, palmitoylated 5 (MAGUK p55 subfamily member)        | 0.2   | 9.9E-02 | 2819.1  | 1865.2 | 88 | 85  |
| ENSMUSG00000021981  | Cab39l     | calcium binding protein 39-like                                       | -0.3  | 1.4E-01 | 964.1   | 1853.8 | 89 | 88  |
| ENSMUSG00000034135  | Sik3       | SIK family kinase 3   | 0.3   | 2.6E-03 | 3753.8  | 1851.1 | 82 | 80  |
| ENSMUSG00000025066  | Sfr1       | SWI5 dependent recombination repair 1                                 | 0.2   | 2.0E-01 | 2648.0  | 1818.4 | 91 | 86  |
| ENSMUSG00000031776  | Arl2bp     | ADP-ribosylation factor-like 2 binding protein                        | 0.1   | 5.8E-01 | 2227.4  | 1809.8 | 97 | 85  |
| ENSMUSG00000075470  | Alg10b     | asparagine-linked glycosylation 10B (alpha-1,2-glucosyltransferase)   | -1.1  | 2.1E-19 | 139.8   | 1807.8 | 88 | 81  |
| ENSMUSG00000027680  | Fxr1       | fragile X mental retardation gene 1, autosomal homolog                | -0.2  | 3.3E-01 | 1128.1  | 1801.2 | 93 | 87  |
| ENSMUSG00000016541  | Atxn10     | ataxin 10   | 0.3   | 2.6E-02 | 3914.5  | 1795.3 | 94 | 84  |
| ENSMUSG00000020390  | Ube2b      | ubiquitin-conjugating enzyme E2B                                      | 0.4   | 1.1E-04 | 4157.3  | 1784.5 | 82 | 85  |
| ENSMUSG00000022964  | Tmem50b    | transmembrane protein 50B   | 0.1   | 7.9E-01 | 2010.3  | 1781.9 | 88 | 85  |
| ENSMUSG00000035248  | Zcchc6     | zinc finger, CCHC domain containing 6                                 | -0.4  | 8.9E-06 | 710.8   | 1772.0 | 87 | 85  |
| ENSMUSG00000022698  | Naa50      | N(alpha)-acetyltransferase 50, NafE catalytic subunit                 | 0.1   | 4.8E-01 | 2249.0  | 1769.1 | 90 | 91  |
| ENSMUSG00000032458  | Copb2      | coatamer protein complex, subunit beta 2 (beta prime)                 | -0.1  | 7.0E-01 | 1550.2  | 1761.3 | 91 | 86  |
| ENSMUSG00000046240  | Hepacam    | hepatocyte cell adhesion molecule                                     | 0.6   | 1.9E-05 | 7424.3  | 1745.2 | 85 | 89  |
| ENSMUSG00000030213  | Atf7ip     | activating transcription factor 7 interacting protein                 | -0.5  | 1.8E-11 | 491.6   | 1730.2 | 91 | 88  |
| ENSMUSG000000061740 | Cyp2d22    | cytochrome P450, family 2, subfamily d, polypeptide 22                | -0.2  | 4.7E-02 | 1053.3  | 1723.2 | 83 | 84  |
| ENSMUSG00000025369  | Smarcc2    | SWI/SNF related, matrix associated, actin dependent regulator of      | 0.0   | 9.4E-01 | 1660.3  | 1714.1 | 81 | 82  |
| ENSMUSG00000036949  | Slc39a12   | solute carrier family 39 (zinc transporter), member 12                | -0.2  | 1.3E-01 | 1047.9  | 1705.8 | 84 | 81  |
| ENSMUSG00000026880  | Stom       | stomatin  | -1.1  | 4.0E-19 | 135.7   | 1696.2 | 91 | 89  |
| ENSMUSG00000074748  | Atxn7l3b   | ataxin 7-like 3B  | 0.5   | 9.1E-12 | 5684.4  | 1691.3 | 91 | 91  |
| ENSMUSG00000026753  | Ppp6c      | protein phosphatase 6, catalytic subunit                              | 0.3   | 1.5E-02 | 3669.2  | 1688.2 | 91 | 88  |
| ENSMUSG00000062604  | Srpk2      | serine/arginine-rich protein specific kinase 2                        | 0.2   | 4.5E-02 | 2799.3  | 1683.9 | 87 | 80  |
| ENSMUSG00000029202  | Pds5a      | PDS5, regulator of cohesion maintenance, homolog A (S. cerevisiae)    | -0.5  | 3.7E-04 | 507.5   | 1672.4 | 92 | 83  |
| ENSMUSG00000037206  | Isr        | immunoglobulin superfamily containing leucine-rich repeat             | -1.1  | 2.5E-19 | 124.3   | 1671.1 | 82 | 82  |
| ENSMUSG00000008734  | Gprc5b     | G protein-coupled receptor, family C, group 5, member B               | -0.2  | 8.6E-02 | 952.5   | 1670.7 | 87 | 85  |
| ENSMUSG00000063856  | Gpx1       | glutathione peroxidase 1  | 0.0   | 9.6E-01 | 1634.1  | 1670.4 | 82 | 80  |
| ENSMUSG00000029536  | Gate       | glutaryl-tRNA(Gln) amidotransferase, subunit C homolog (bacteria)     | 0.2   | 4.6E-01 | 2413.5  | 1663.3 | 95 | 92  |
| ENSMUSG00000025823  | Pdia4      | protein disulfide isomerase associated 4                              | -0.8  | 1.1E-09 | 231.0   | 1656.2 | 80 | 82  |
| ENSMUSG00000005371  | Fbxo11     | F-box protein 11  | 0.1   | 4.5E-01 | 2058.8  | 1649.7 | 85 | 85  |
| ENSMUSG00000024740  | Ddb1       | damage specific DNA binding protein 1                                 | 0.0   | 8.5E-01 | 1542.5  | 1649.2 | 88 | 81  |
| ENSMUSG00000025630  | Hprt       | hypoxanthine guanine phosphoribosyl transferase                       | -0.3  | 1.2E-02 | 780.3   | 1644.8 | 94 | 94  |
| ENSMUSG00000011884  | Gltp       | glycolipid transfer protein   | 0.0   | 7.7E-01 | 1783.9  | 1632.2 | 93 | 83  |
| ENSMUSG00000042390  | Gatad2b    | GATA zinc finger domain containing 2B                                 | -0.1  | 7.1E-01 | 1429.9  | 1622.2 | 99 | 94  |
| ENSMUSG00000075701  | Vimp       | VCP-interacting membrane protein                                      | -0.3  | 1.4E-01 | 805.3   | 1619.7 | 93 | 94  |
| ENSMUSG00000024908  | Ppp6r3     | protein phosphatase 6, regulatory subunit 3                           | 0.0   | 9.9E-01 | 1604.0  | 1615.7 | 96 | 89  |
| ENSMUSG00000000149  | Gna12      | guanine nucleotide binding protein, alpha 12                          | 0.2   | 1.2E-01 | 2289.7  | 1610.0 | 89 | 80  |
| ENSMUSG00000032405  | Pias1      | protein inhibitor of activated STAT 1                                 | 0.0   | 9.4E-01 | 1562.8  | 1607.4 | 94 | 86  |
| ENSMUSG00000059811  | Atl2       | atlastin GTPase 2   | 0.0   | 9.3E-01 | 1660.3  | 1604.9 | 92 | 91  |
| ENSMUSG00000020386  | Sar1b      | SAR1 gene homolog B (S. cerevisiae)                                   | 0.1   | 7.0E-01 | 1976.4  | 1586.1 | 88 | 87  |
| ENSMUSG00000031765  | Mt1        | metallothionein 1   | 1.0   | 2.0E-22 | 16844.4 | 1585.6 | 99 | 98  |
| ENSMUSG00000022867  | Usp25      | ubiquitin specific peptidase 25                                       | -0.3  | 2.4E-02 | 801.0   | 1583.7 | 93 | 91  |
| ENSMUSG00000050017  | Pitpnb     | phosphatidylinositol transfer protein, beta                           | -0.1  | 8.2E-01 | 1375.1  | 1574.1 | 93 | 91  |
| ENSMUSG00000003974  | Grm3       | glutamate receptor, metabotropic 3                                    | 0.0   | 9.2E-01 | 1470.8  | 1567.0 | 90 | 84  |
| ENSMUSG00000060992  | Copz1      | coatamer protein complex, subunit zeta 1                              | 0.4   | 8.3E-04 | 3820.2  | 1563.4 | 90 | 87  |
| ENSMUSG00000027206  | Cops2      | COP9 (constitutive photomorphogenic) homolog, subunit 2 (Arabidopsis) | 0.2   | 4.4E-02 | 2599.6  | 1563.0 | 89 | 84  |
| ENSMUSG00000033917  | Gde1       | glycerophosphodiester phosphodiesterase 1                             | -0.4  | 1.3E-05 | 602.5   | 1543.9 | 85 | 83  |
| ENSMUSG00000005103  | Wdr1       | WD repeat domain 1  | 0.1   | 2.5E-01 | 2079.2  | 1542.6 | 88 | 84  |
| ENSMUSG00000032212  | Sltm       | SAFB-like, transcription modulator                                    | -0.4  | 4.1E-03 | 565.8   | 1541.3 | 92 | 91  |
| ENSMUSG00000028149  | Rap1gds1   | RAP1, GTP-GDP dissociation stimulator 1                               | 0.2   | 1.5E-01 | 2370.9  | 1539.0 | 90 | 83  |
| ENSMUSG00000003518  | Dusp3      | dual specificity phosphatase 3 (vaccinia virus phosphatase VHI-18)    | -0.1  | 3.5E-01 | 1260.3  | 1527.0 | 84 | 80  |
| ENSMUSG00000059263  | Usp47      | ubiquitin specific peptidase 47                                       | 0.0   | 9.0E-01 | 1567.6  | 1509.3 | 86 | 85  |
| ENSMUSG00000074238  | Ap1ar      | adaptor-related protein complex 1 associated regulatory protein       | -0.2  | 1.7E-01 | 939.6   | 1507.8 | 85 | 82  |
| ENSMUSG00000022000  | Zc3h13     | zinc finger CCHC type containing 13                                   | -0.4  | 7.9E-04 | 551.2   | 1475.6 | 83 | 83  |
| ENSMUSG00000028173  | Wls        | wntless homolog (Drosophila)  | -0.7  | 1.8E-06 | 269.1   | 1471.0 | 89 | 87  |
| ENSMUSG00000020994  | Pnn        | pinin   | -0.4  | 2.5E-02 | 588.4   | 1446.8 | 87 | 85  |
| ENSMUSG00000030774  | Pak1       | p21 protein (Cdc42/Rac)-activated kinase 1                            | 0.4   | 1.8E-05 | 3445.6  | 1446.6 | 89 | 89  |
| ENSMUSG00000059713  | Recan3     | regulator of calcineurin 3  | -0.1  | 6.3E-01 | 1246.3  | 1442.2 | 87 | 81  |
| ENSMUSG00000009035  | Tmem184b   | transmembrane protein 184b  | -0.7  | 6.8E-07 | 290.4   | 1435.0 | 85 | 84  |
| ENSMUSG00000022091  | Sorbs3     | sorbin and SH3 domain containing 3                                    | 0.2   | 8.3E-02 | 2147.8  | 1433.3 | 88 | 84  |
| ENSMUSG00000044229  | Nxpe4      | neurexophilin and PC-esterase domain family, member 4                 | -0.6  | 2.2E-23 | 337.1   | 1425.7 | 89 | 89  |
| ENSMUSG00000021537  | Cetn3      | centrin 3   | 0.4   | 6.4E-06 | 3794.9  | 1403.7 | 98 | 95  |
| ENSMUSG00000021474  | Sfxn1      | sideroflexin 1  | 0.4   | 4.4E-04 | 3733.4  | 1395.4 | 89 | 87  |
| ENSMUSG00000029649  | Pomp       | proteasome maturation protein   | 0.3   | 3.1E-02 | 2902.8  | 1394.7 | 95 | 91  |
| ENSMUSG00000029169  | Dhx15      | DEAH (Asp-Glu-Ala-His) box polypeptide 15                             | 0.1   | 5.6E-01 | 1637.4  | 1373.9 | 89 | 87  |
| ENSMUSG00000020467  | Efemp1     | epidermal growth factor-containing fibulin-like extracellular matrix  | -1.0  | 6.1E-17 | 138.8   | 1372.4 | 89 | 87  |
| ENSMUSG00000029407  | Uso1       | USO1 vesicle docking factor   | 0.0   | 8.5E-01 | 1296.7  | 1372.2 | 88 | 81  |
| ENSMUSG00000024404  | Rio3       | RIO kinase 3  | 0.0   | 9.1E-01 | 1449.3  | 1368.4 | 82 | 85  |
| ENSMUSG00000020650  | Bcap29     | B cell receptor associated protein 29                                 | -0.5  | 5.9E-03 | 440.7   | 1365.3 | 83 | 81  |
| ENSMUSG00000031696  | Vps35      | vacuolar protein sorting 35   | 0.3   | 9.9E-02 | 2610.3  | 1359.5 | 94 | 89  |
| ENSMUSG00000070923  | Klh9       | kelch-like 9  | 0.5   | 1.5E-06 | 4176.4  | 1354.7 | 91 | 81  |
| ENSMUSG00000037049  | Smpd1      | sphingomyelin phosphodiesterase 1, acid lysosomal                     | -0.4  | 1.7E-02 | 543.2   | 1351.8 | 89 | 84  |
| ENSMUSG00000029084  | Cd38       | CD38 antigen  | -0.38 | 8.3E-02 | 684.1   | 1332.8 | 88 | 88  |
| ENSMUSG00000027500  | Stmn2      | stathmin-like 2   | -0.1  | 6.8E-01 | 1115.1  | 1325.5 | 98 | 97  |
| ENSMUSG00000039704  | Lmbrd2     | LMBR1 domain containing 2   | -0.7  | 3.5E-07 | 263.4   | 1323.6 | 89 | 81  |
| ENSMUSG00000047213  | Ythdf3     | YTH domain family 3   | 0.1   | 6.1E-01 | 1687.1  | 1320.6 | 85 | 85  |
| ENSMUSG00000003420  | Fcgrt      | Fc receptor, IgG, alpha chain transporter                             | -0.8  | 1.0E-15 | 204.6   | 1304.9 | 93 | 97  |
| ENSMUSG00000031021  | Tmem9b     | TMEM9 domain family, member B   | -0.1  | 3.2E-01 | 1067.5  | 1303.7 | 87 | 82  |
| ENSMUSG00000081534  | Slc48a1    | solute carrier family 48 (heme transporter), member 1                 | 0.0   | 8.5E-01 | 1422.7  | 1301.2 | 88 | 85  |
| ENSMUSG00000056851  | Pcbp2      | poly(rC) binding protein 2  | 0.0   | 9.2E-01 | 1333.5  | 1299.1 | 86 | 84  |
| ENSMUSG00000027363  | Usp8       | ubiquitin specific peptidase 8  | 0.2   | 1.1E-01 | 2044.0  | 1297.2 | 86 | 86  |

|                     |          |   |      |         |         |        |     |     |
|---------------------|----------|---|------|---------|---------|--------|-----|-----|
| ENSMUSG00000023921  | Mut      | methylmalonyl-Coenzyme A mutase                                   | 0.2  | 4.2E-01 | 2061.0  | 1294.1 | 83  | 85  |
| ENSMUSG00000025544  | Tm9a2    | transmembrane 9 superfamily member 2                              | -0.6 | 7.6E-11 | 358.5   | 1290.8 | 82  | 83  |
| ENSMUSG00000028419  | Chmp5    | charged multivesicular body protein 5                             | 0.5  | 2.6E-05 | 4165.8  | 1290.3 | 91  | 81  |
| ENSMUSG00000034463  | Scara3   | scavenger receptor class A, member 3                              | -0.2 | 2.5E-01 | 784.8   | 1275.6 | 82  | 83  |
| ENSMUSG00000020074  | Ccar1    | cell division cycle and apoptosis regulator 1                     | 0.0  | 9.2E-01 | 1332.8  | 1272.9 | 81  | 84  |
| ENSMUSG00000038546  | Ranbp9   | RAN binding protein 9   | 0.3  | 6.3E-02 | 2469.2  | 1268.2 | 83  | 84  |
| ENSMUSG00000079111  | Kdelr2   | KDEL (Lys-Asp-Glu-Leu) endoplasmic reticulum protein retention    | -0.6 | 1.1E-07 | 324.8   | 1261.0 | 91  | 91  |
| ENSMUSG00000034152  | Exoc3    | exocyst complex component 3                                       | 0.2  | 1.8E-01 | 1907.0  | 1250.1 | 87  | 81  |
| ENSMUSG00000053012  | Krccl1   | lysine-rich coiled-coil 1   | 0.1  | 5.8E-01 | 1582.2  | 1244.2 | 88  | 87  |
| ENSMUSG00000032348  | Gsta4    | glutathione S-transferase, alpha 4                                | 0.3  | 6.1E-03 | 2553.7  | 1242.0 | 93  | 89  |
| ENSMUSG00000049612  | Omg      | oligodendrocyte myelin glycoprotein                               | 0.3  | 7.3E-03 | 2581.1  | 1234.2 | 91  | 80  |
| ENSMUSG00000026202  | Tub4a    | tubulin, alpha 4A   | 0.6  | NA      | 5131.2  | 1233.0 | 99  | 90  |
| ENSMUSG00000033940  | Brk1     | BRICK1, SCAR/WAVE actin-nucleating complex subunit                | 0.7  | 5.5E-09 | 5965.3  | 1224.6 | 91  | 85  |
| ENSMUSG00000032060  | Cryab    | crystallin, alpha B   | 0.6  | 8.7E-11 | 4421.0  | 1218.8 | 85  | 81  |
| ENSMUSG00000021760  | Gpx8     | glutathione peroxidase 8 (putative)                               | -0.8 | 4.5E-07 | 182.6   | 1214.5 | 97  | 100 |
| ENSMUSG00000028416  | Bag1     | BCL2-associated athanogene 1                                      | 0.3  | 2.0E-01 | 2307.4  | 1212.9 | 83  | 81  |
| ENSMUSG00000030754  | Copb1    | coatamer protein complex, subunit beta 1                          | -0.2 | 6.3E-02 | 684.0   | 1196.4 | 95  | 88  |
| ENSMUSG00000032026  | Rexo2    | REX2, RNA exonuclease 2 homolog (S, cerevisiae)                   | 0.2  | 1.3E-02 | 1912.5  | 1191.0 | 91  | 90  |
| ENSMUSG00000036095  | Dgkb     | diacylglycerol kinase, beta                                       | 0.5  | 8.0E-05 | 4113.3  | 1168.0 | 85  | 81  |
| ENSMUSG00000008859  | Rala     | v-ral simian leukemia viral oncogene homolog A (ras related)      | 0.3  | 3.9E-03 | 2261.5  | 1161.6 | 86  | 85  |
| ENSMUSG00000021238  | Aldh6a1  | aldehyde dehydrogenase family 6, subfamily A1                     | 0.8  | 6.8E-06 | 8419.3  | 1153.4 | 85  | 81  |
| ENSMUSG00000030647  | Ndufc2   | NADH dehydrogenase (ubiquinone) 1, subcomplex unknown, 2          | 0.5  | 1.4E-02 | 3402.0  | 1144.4 | 88  | 82  |
| ENSMUSG00000001942  | Siae     | sialic acid acetyltransferase                                     | -0.8 | 2.9E-12 | 171.5   | 1141.1 | 88  | 84  |
| ENSMUSG00000027428  | Rbbp9    | retinoblastoma binding protein 9                                  | 0.5  | 4.0E-04 | 3728.8  | 1130.3 | 90  | 83  |
| ENSMUSG00000028822  | Tmem50a  | transmembrane protein 50A   | -0.3 | 6.0E-03 | 555.6   | 1125.8 | 80  | 80  |
| ENSMUSG00000022403  | St13     | suppression of tumorigenicity 13                                  | 0.5  | 1.5E-14 | 3484.6  | 1124.2 | 87  | 86  |
| ENSMUSG00000021114  | Atp6v1d  | ATPase, H+ transporting, lysosomal V1 subunit D                   | 0.4  | 1.2E-04 | 2578.7  | 1111.2 | 88  | 84  |
| ENSMUSG00000033047  | Eif3f    | eukaryotic translation initiation factor 3, subunit L             | 0.0  | 8.4E-01 | 1030.9  | 1100.1 | 95  | 94  |
| ENSMUSG00000027495  | Fam210b  | family with sequence similarity 210, member B                     | 0.1  | 7.4E-01 | 1352.2  | 1082.4 | 81  | 82  |
| ENSMUSG00000020589  | Fam49a   | family with sequence similarity 49, member A                      | 0.6  | 4.7E-08 | 4547.7  | 1077.6 | 88  | 82  |
| ENSMUSG00000004789  | Dlst     | dihydropyrimidinase S-succinyltransferase (E2 component of 2-oxo- | 0.3  | 4.0E-02 | 1936.7  | 1075.1 | 87  | 83  |
| ENSMUSG00000000399  | Ndufa9   | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 9             | 0.4  | 3.4E-03 | 2949.8  | 1071.6 | 92  | 81  |
| ENSMUSG00000032011  | Thy1     | thymus cell antigen 1, theta                                      | 0.1  | 7.4E-01 | 1201.1  | 1065.6 | 84  | 81  |
| ENSMUSG00000020708  | Psmc5    | protease (prosome, macropain) 26S subunit, ATPase 5               | 0.4  | 3.7E-03 | 2445.6  | 1053.0 | 96  | 92  |
| ENSMUSG00000031791  | Tmem38a  | transmembrane protein 38A   | -0.3 | 5.7E-02 | 507.3   | 1044.2 | 80  | 81  |
| ENSMUSG00000040520  | Manea    | mannosidase, endo-alpha   | -0.1 | 6.1E-01 | 784.0   | 1037.7 | 82  | 81  |
| ENSMUSG00000029777  | Gars     | glycyl-tRNA synthetase  | 0.0  | 8.6E-01 | 944.4   | 1033.7 | 87  | 85  |
| ENSMUSG00000039007  | Cpq      | carboxypeptidase Q  | -0.8 | 1.5E-08 | 151.8   | 1019.2 | 84  | 81  |
| ENSMUSG00000025006  | Sorbs1   | sorbin and SH3 domain containing 1                                | 0.1  | 4.8E-01 | 1272.3  | 1014.8 | 89  | 80  |
| ENSMUSG00000030059  | Tmf1     | TATA element modulatory factor 1                                  | -0.1 | 5.6E-01 | 846.4   | 1013.1 | 87  | 81  |
| ENSMUSG00000073639  | Rab18    | RAB18, member RAS oncogene family                                 | 0.7  | 4.6E-07 | 5195.0  | 1001.2 | 91  | 80  |
| ENSMUSG00000021701  | PIK2     | polo-like kinase 2  | -0.2 | 2.4E-01 | 574.2   | 991.4  | 89  | 88  |
| ENSMUSG00000004394  | Tmed4    | transmembrane emp24 protein transport domain containing 4         | -0.4 | 4.2E-05 | 389.1   | 989.4  | 83  | 83  |
| ENSMUSG00000032766  | Gng11    | guanine nucleotide binding protein (G protein), gamma 11          | -0.4 | 1.7E-02 | 423.2   | 974.7  | 86  | 82  |
| ENSMUSG00000001774  | Chordc1  | cysteine and histidine-rich domain (CHORD)-containing, zinc-bin   | 0.2  | 2.3E-01 | 1484.7  | 969.2  | 92  | 83  |
| ENSMUSG00000041645  | Ddx24    | DEAD (Asp-Glu-Ala-Asp) box polypeptide 24                         | 0.0  | 8.0E-01 | 880.0   | 960.5  | 81  | 82  |
| ENSMUSG00000032018  | Sc5d     | sterol-C5-desaturase (fungal ERG3, delta-5-desaturase) homolog (  | -0.3 | 2.3E-02 | 468.5   | 955.4  | 88  | 88  |
| ENSMUSG00000020644  | Id2      | inhibitor of DNA binding 2  | 1.2  | 2.4E-19 | 17351.5 | 942.1  | 92  | 81  |
| ENSMUSG00000032279  | Idh3a    | isocitrate dehydrogenase 3 (NAD+) alpha                           | 0.6  | 2.7E-08 | 3922.2  | 933.1  | 91  | 84  |
| ENSMUSG00000063297  | Luzp2    | leucine zipper protein 2  | 0.5  | 1.4E-02 | 3006.1  | 924.0  | 92  | 99  |
| ENSMUSG00000029156  | Sgcb     | sarcoglycan, beta (dystrophin-associated glycoprotein)            | -0.3 | 1.5E-01 | 492.7   | 923.5  | 82  | 90  |
| ENSMUSG00000006360  | Crip1    | cysteine-rich protein 1 (intestinal)                              | -1.0 | 1.1E-11 | 84.2    | 913.8  | 93  | 93  |
| ENSMUSG00000028005  | Gucy1b3  | guanylate cyclase 1, soluble, beta 3                              | -0.1 | 5.5E-01 | 727.2   | 908.6  | 85  | 80  |
| ENSMUSG00000023367  | Tmem176a | transmembrane protein 176A  | -0.3 | 1.8E-03 | 437.3   | 903.7  | 90  | 92  |
| ENSMUSG00000022295  | Atp6v1c1 | ATPase, H+ transporting, lysosomal V1 subunit C1                  | 0.5  | 7.9E-03 | 2928.9  | 900.2  | 91  | 83  |
| ENSMUSG00000062929  | Cf12     | cofilin 2, muscle   | 0.6  | 2.5E-04 | 3574.1  | 899.4  | 81  | 81  |
| ENSMUSG00000036295  | Lrn3     | leucine rich repeat protein 3, neuronal                           | -0.7 | 7.5E-07 | 180.2   | 895.7  | 86  | 91  |
| ENSMUSG00000066232  | Ipo7     | importin 7  | -0.2 | 1.6E-01 | 520.4   | 890.2  | 95  | 81  |
| ENSMUSG00000002015  | Bcap31   | B cell receptor associated protein 31                             | -0.5 | 2.4E-02 | 296.0   | 888.9  | 88  | 91  |
| ENSMUSG00000016018  | Skiv2l2  | superkiller viralicidic activity 2-like 2 (S, cerevisiae)         | 0.0  | 7.8E-01 | 804.5   | 888.3  | 86  | 80  |
| ENSMUSG000000096262 | Ap1g1    | adaptor protein complex AP-1, gamma 1 subunit                     | -0.2 | 3.0E-01 | 606.3   | 874.8  | 96  | 96  |
| ENSMUSG00000072294  | Klf12    | Kruppel-like factor 12  | -0.1 | 3.3E-01 | 633.2   | 871.1  | 90  | 84  |
| ENSMUSG00000031954  | Cfdp1    | craniofacial development protein 1                                | 0.4  | 1.0E-04 | 2194.3  | 866.4  | 94  | 84  |
| ENSMUSG00000046818  | Ddit4l   | DNA-damage-inducible transcript 4-like                            | 0.4  | 3.8E-03 | 2331.7  | 864.6  | 81  | 83  |
| ENSMUSG000000094870 | Zfp131   | zinc finger protein 131   | -0.3 | 1.6E-02 | 449.3   | 861.2  | 93  | 85  |
| ENSMUSG00000041986  | Elmod1   | ELMO/CED-12 domain containing 1                                   | -0.2 | 1.1E-01 | 560.0   | 861.1  | 86  | 85  |
| ENSMUSG00000039756  | Dntip2   | deoxynucleotidyltransferase, terminal, interacting protein 2      | -0.1 | 5.6E-01 | 697.4   | 859.7  | 91  | 85  |
| ENSMUSG00000033793  | Atp6v1h  | ATPase, H+ transporting, lysosomal V1 subunit H                   | 0.3  | 2.0E-02 | 1904.2  | 859.5  | 90  | 81  |
| ENSMUSG00000039067  | Psmd7    | prosome (prosome, macropain) 26S subunit, non-ATPase, 7           | 0.4  | 8.7E-04 | 2252.5  | 848.5  | 91  | 87  |
| ENSMUSG00000025381  | Cnpy2    | canopy 2 homolog (zebrafish)                                      | -0.3 | 6.8E-02 | 411.2   | 845.0  | 84  | 80  |
| ENSMUSG00000059970  | Hspa2    | heat shock protein 2  | 0.5  | 1.6E-03 | 2894.8  | 843.2  | 80  | 89  |
| ENSMUSG00000022404  | Slc25a17 | solute carrier family 25 (mitochondrial carrier, peroxisomal memb | 0.0  | 9.1E-01 | 777.8   | 842.6  | 94  | 80  |
| ENSMUSG00000071180  | Smim15   | small integral membrane protein 15                                | 0.4  | 1.1E-02 | 2105.0  | 840.1  | 98  | 95  |
| ENSMUSG00000029048  | Rer1     | RER1 retention in endoplasmic reticulum 1 homolog (S, cerevisia   | 0.0  | 8.8E-01 | 782.4   | 830.7  | 82  | 89  |
| ENSMUSG00000068882  | Ssb      | Sjogren syndrome antigen B  | 0.3  | 1.7E-02 | 1604.6  | 825.1  | 91  | 85  |
| ENSMUSG00000021823  | Vcl      | vinculin  | -0.3 | 2.0E-01 | 398.7   | 823.3  | 87  | 88  |
| ENSMUSG00000031948  | Kars     | lysyl-tRNA synthetase   | -0.1 | 3.8E-01 | 679.4   | 813.2  | 91  | 83  |
| ENSMUSG00000022766  | Serpind1 | serine (or cysteine) peptidase inhibitor, clade D, member 1       | -1.1 | 5.3E-09 | 66.7    | 812.9  | 84  | 85  |
| ENSMUSG00000040385  | Ppp1ca   | protein phosphatase 1, catalytic subunit, alpha isoform           | 0.4  | 2.1E-03 | 2148.9  | 808.0  | 95  | 90  |
| ENSMUSG00000019210  | Atp6v1e1 | ATPase, H+ transporting, lysosomal V1 subunit E1                  | 0.6  | 1.2E-11 | 3197.4  | 806.9  | 93  | 89  |
| ENSMUSG00000042229  | Rabif    | RAB interacting factor  | 0.1  | 7.3E-01 | 978.8   | 805.0  | 90  | 83  |
| ENSMUSG00000047036  | Zfp445   | zinc finger protein 445   | -0.3 | 3.3E-02 | 381.0   | 780.8  | 87  | 84  |
| ENSMUSG00000004096  | Cwc15    | CWC15 homolog (S, cerevisiae)                                     | 0.5  | 1.3E-06 | 2312.9  | 776.1  | 93  | 81  |
| ENSMUSG00000036880  | Acaa2    | acetyl-Coenzyme A acyltransferase 2 (mitochondrial 3-oxoacyl-C    | 0.5  | 1.5E-06 | 2485.5  | 772.4  | 87  | 92  |
| ENSMUSG00000026020  | Nop58    | NOP58 ribonucleoprotein   | -0.3 | 1.5E-03 | 388.0   | 768.4  | 91  | 86  |
| ENSMUSG00000070697  | Utp3     | UTP3, small subunit (SSU) processome component, homolog (S, c     | -0.1 | 3.9E-01 | 581.7   | 758.4  | 93  | 94  |
| ENSMUSG00000044080  | S100a1   | S100 calcium binding protein A1                                   | 1.0  | 4.8E-07 | 7640.1  | 753.9  | 92  | 83  |
| ENSMUSG00000019173  | Rab5c    | RAB5C, member RAS oncogene family                                 | 0.6  | 3.7E-06 | 2904.9  | 751.2  | 80  | 81  |
| ENSMUSG00000022354  | Ndufb9   | NADH dehydrogenase (ubiquinone) 1 beta subcomplex, 9              | 0.5  | 1.0E-08 | 2678.7  | 750.5  | 94  | 90  |
| ENSMUSG00000068617  | Efcab1   | EF hand calcium binding domain 1                                  | -0.8 | 2.0E-05 | 123.5   | 744.5  | 86  | 81  |
| ENSMUSG00000024870  | Rab1b    | RAB1B, member RAS oncogene family                                 | 0.4  | 5.5E-03 | 1928.4  | 721.7  | 85  | 88  |
| ENSMUSG00000041084  | Ostc     | oligosaccharyltransferase complex subunit                         | 0.0  | 7.6E-01 | 643.4   | 716.9  | 91  | 90  |
| ENSMUSG00000031729  | Ist1     | increased sodium tolerance 1 homolog (yeast)                      | 0.3  | 1.7E-01 | 1305.7  | 708.7  | 84  | 81  |
| ENSMUSG00000053565  | Eif3k    | eukaryotic translation initiation factor 3, subunit K             | 0.2  | 2.7E-01 | 1016.2  | 704.9  | 100 | 99  |
| ENSMUSG00000003380  | Rabac1   | Rab acceptor 1 (prenylated)                                       | 0.0  | 7.3E-01 | 641.9   | 704.8  | 88  | 89  |

|                     |            |   |      |         |        |       |    |    |
|---------------------|------------|---|------|---------|--------|-------|----|----|
| ENSMUSG00000024097  | Srst7      | serine/arginine-rich splicing factor 7                            | 0.3  | 1.2E-01 | 1582.8 | 704.3 | 85 | 80 |
| ENSMUSG00000032606  | Nicn1      | nicotin 1   | 0.4  | 6.5E-06 | 1856.8 | 700.5 | 91 | 88 |
| ENSMUSG00000070319  | Eif3g      | eukaryotic translation initiation factor 3, subunit G             | 0.2  | 5.2E-02 | 1200.8 | 690.5 | 94 | 86 |
| ENSMUSG00000042082  | Ar5b       | arylsulfatase B   | -0.5 | 4.5E-03 | 215.9  | 672.2 | 87 | 93 |
| ENSMUSG00000030317  | Timp4      | tissue inhibitor of metalloproteinase 4                           | 0.9  | 5.4E-05 | 5744.6 | 671.5 | 83 | 81 |
| ENSMUSG00000022551  | Cyc1       | cytochrome c-1  | 0.8  | 2.3E-07 | 4221.9 | 662.1 | 90 | 80 |
| ENSMUSG00000070934  | Rraga      | Ras-related GTP binding A   | 0.3  | 9.1E-03 | 1434.8 | 661.9 | 90 | 81 |
| ENSMUSG00000028843  | Sh3bgrl3   | SH3 domain binding glutamic acid-rich protein-like 3              | 0.0  | 9.3E-01 | 625.6  | 655.5 | 90 | 85 |
| ENSMUSG00000071655  | Ubxn1      | UBX domain protein 1  | 0.3  | 3.6E-02 | 1303.3 | 642.6 | 95 | 87 |
| ENSMUSG00000026245  | Farsb      | phenylalanyl-tRNA synthetase, beta subunit                        | 0.1  | 3.5E-01 | 855.1  | 638.9 | 90 | 80 |
| ENSMUSG00000030847  | Bag3       | BCL2-associated athanogene 3                                      | 0.1  | 6.2E-01 | 849.2  | 635.2 | 80 | 84 |
| ENSMUSG00000022490  | Ppp1r1a    | protein phosphatase 1, regulatory (inhibitor) subunit 1A          | 0.0  | 8.0E-01 | 561.6  | 617.2 | 84 | 92 |
| ENSMUSG00000014769  | Psmb1      | proteasome (prosome, macropain) subunit, beta type 1              | 0.4  | 1.5E-02 | 1495.4 | 613.0 | 93 | 91 |
| ENSMUSG00000014294  | Ndufa2     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 2             | 0.3  | 1.4E-01 | 1266.4 | 611.9 | 97 | 95 |
| ENSMUSG00000029632  | Ndufa4     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 4             | 0.5  | 5.2E-03 | 1962.2 | 609.1 | 96 | 98 |
| ENSMUSG00000022453  | Naga       | N-acetyl galactosaminidase, alpha                                 | -0.3 | 1.5E-04 | 306.8  | 591.8 | 87 | 82 |
| ENSMUSG00000016528  | Mapkapk2   | MAP kinase-activated protein kinase 2                             | 0.1  | 5.1E-01 | 704.5  | 589.4 | 90 | 81 |
| ENSMUSG00000021832  | Psmc6      | proteasome (prosome, macropain) 26S subunit, ATPase, 6            | 0.2  | 1.1E-01 | 1002.4 | 584.2 | 90 | 86 |
| ENSMUSG00000041126  | H2afv      | H2A histone family, member V                                      | 0.6  | 4.3E-05 | 2405.6 | 582.1 | 90 | 88 |
| ENSMUSG00000048970  | C1galt1c1  | C1GALT1-specific chaperone 1                                      | -0.2 | 3.9E-01 | 333.8  | 580.6 | 81 | 90 |
| ENSMUSG00000025868  | Higd2a     | HIG1 domain family, member 2A                                     | 0.6  | 7.2E-07 | 2208.0 | 578.1 | 94 | 94 |
| ENSMUSG00000024780  | Cdc371i    | cell division cycle 37-like 1                                     | 0.6  | 1.9E-12 | 2305.7 | 571.3 | 92 | 81 |
| ENSMUSG00000024997  | Prdx3      | peroxiredoxin 3   | 0.6  | 2.2E-05 | 2399.7 | 557.3 | 87 | 87 |
| ENSMUSG00000055720  | Ubi7       | ubiquitin-like 7 (bone marrow stromal cell-derived)               | 0.3  | 1.1E-02 | 1171.8 | 551.6 | 89 | 80 |
| ENSMUSG00000004902  | Sle25a18   | solute carrier family 25 (mitochondrial carrier), member 18       | 1.0  | 3.2E-04 | 6134.8 | 538.1 | 83 | 94 |
| ENSMUSG00000019789  | Hey2       | hair/enhancer-of-split related with YRPW motif 2                  | 0.1  | 4.3E-01 | 719.5  | 532.6 | 80 | 85 |
| ENSMUSG00000010376  | Nedd8      | neural precursor cell expressed, developmentally down-regulated ; | 0.6  | 5.2E-07 | 2057.6 | 526.4 | 99 | 85 |
| ENSMUSG00000035765  | Dym        | dymeclin  | 0.1  | 5.0E-01 | 693.7  | 507.9 | 88 | 82 |
| ENSMUSG00000006315  | Tmem147    | transmembrane protein 147   | -0.4 | 1.5E-05 | 197.8  | 505.8 | 89 | 82 |
| ENSMUSG00000036570  | Fxyd1      | FXYP domain-containing ion transport regulator 1                  | 0.1  | 7.7E-01 | 578.8  | 504.1 | 86 | 89 |
| ENSMUSG00000009281  | Rarres2    | retinoic acid receptor responder (tazarotene induced) 2           | -0.9 | 5.9E-11 | 55.7   | 501.5 | 99 | 99 |
| ENSMUSG00000025651  | Uqcrc1     | ubiquinol-cytochrome c reductase core protein 1                   | 0.5  | 4.2E-06 | 1523.7 | 496.6 | 87 | 83 |
| ENSMUSG00000051256  | Jagn1      | jagunal homolog 1 (Drosophila)                                    | -0.1 | 5.9E-01 | 400.8  | 484.3 | 83 | 83 |
| ENSMUSG00000062381  | Vps28      | vacuolar protein sorting 28 (yeast)                               | 0.6  | 3.4E-11 | 1715.1 | 474.1 | 92 | 89 |
| ENSMUSG00000021033  | Gstz1      | glutathione transferase zeta 1 (maleylacetacetate isomerase)      | 0.6  | 1.2E-10 | 1760.0 | 472.1 | 86 | 85 |
| ENSMUSG00000002580  | Mien1      | migration and invasion enhancer 1                                 | 0.6  | NA      | 1779.7 | 470.4 | 85 | 84 |
| ENSMUSG00000024194  | Cuta       | cutA divalent cation tolerance homolog (E. coli)                  | 0.4  | 3.8E-02 | 1234.8 | 466.3 | 94 | 85 |
| ENSMUSG00000030629  | Zfand6     | zinc finger, AN1-type domain 6                                    | -0.4 | 2.3E-03 | 1234.9 | 463.9 | 88 | 81 |
| ENSMUSG00000039168  | Dap        | death-associated protein  | -0.2 | 2.1E-01 | 295.4  | 463.9 | 85 | 82 |
| ENSMUSG00000006736  | Tspan31    | tetraspanin 31  | -0.3 | 2.1E-01 | 219.7  | 460.4 | 92 | 94 |
| ENSMUSG00000022450  | Ndufa6     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 6 (B14)       | 0.3  | 3.5E-02 | 960.0  | 447.4 | 87 | 84 |
| ENSMUSG00000004759  | Cntm5      | CKLF-like MARVEL transmembrane domain containing 5                | 0.8  | 5.5E-05 | 2879.2 | 447.0 | 90 | 99 |
| ENSMUSG00000021290  | 2010107E04 | RIKEN cDNA 2010107E04 gene  | 0.8  | 6.9E-18 | 3000.0 | 435.1 | 93 | 95 |
| ENSMUSG00000039197  | Adk        | adenosine kinase  | 1.1  | 4.1E-08 | 5365.6 | 421.7 | 82 | 85 |
| ENSMUSG00000063200  | Nol7       | nucleolar protein 7   | 0.4  | 8.6E-03 | 938.4  | 413.3 | 80 | 81 |
| ENSMUSG00000031578  | Mak16      | MAK16 homolog (S. cerevisiae)                                     | 0.1  | 4.2E-01 | 507.3  | 409.7 | 87 | 81 |
| ENSMUSG00000026895  | Ndufa8     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 8             | 0.7  | 1.9E-06 | 2003.8 | 405.3 | 81 | 85 |
| ENSMUSG00000036751  | Cox6b1     | cytochrome c oxidase, subunit VIb polypeptide 1                   | 0.7  | 1.4E-08 | 2201.7 | 402.3 | 93 | 83 |
| ENSMUSG00000059534  | Uger10     | ubiquinol-cytochrome c reductase, complex III subunit X           | 0.7  | 1.3E-09 | 1796.6 | 397.0 | 88 | 80 |
| ENSMUSG00000025035  | Ar3        | ADP-ribosylation factor-like 3                                    | 0.6  | 4.4E-09 | 1666.7 | 396.7 | 97 | 90 |
| ENSMUSG00000059734  | Ndufs8     | NADH dehydrogenase (ubiquinone) Fe-S protein 8                    | 0.6  | 9.9E-04 | 1654.3 | 394.5 | 86 | 85 |
| ENSMUSG00000021607  | Mrp136     | mitochondrial ribosomal protein L36                               | 0.5  | 1.1E-06 | 1287.8 | 378.9 | 91 | 88 |
| ENSMUSG00000024537  | Psmg2      | proteasome (prosome, macropain) assembly chaperone 2              | 0.0  | 9.8E-01 | 366.6  | 364.7 | 95 | 80 |
| ENSMUSG0000005054   | Cstb       | cystatin B  | 0.5  | 4.0E-03 | 1249.2 | 357.4 | 91 | 92 |
| ENSMUSG00000028029  | Aimp1      | aminoacyl tRNA synthetase complex-interacting multifunctional p   | 0.0  | 8.9E-01 | 379.7  | 352.6 | 90 | 82 |
| ENSMUSG00000033916  | Chmp2a     | charged multivesicular body protein 2A                            | 0.4  | 2.2E-04 | 777.4  | 343.2 | 89 | 80 |
| ENSMUSG00000003955  | Fam162a    | family with sequence similarity 162, member A                     | 0.6  | 2.6E-03 | 1485.3 | 335.9 | 94 | 94 |
| ENSMUSG00000019362  | D8Erd738e  | DNA segment, Chr 8, ERATO Doi 738, expressed                      | 0.6  | 4.0E-04 | 1302.5 | 331.0 | 84 | 81 |
| ENSMUSG00000039016  | Timm8b     | translocase of inner mitochondrial membrane 8B                    | 0.6  | 1.7E-09 | 1283.4 | 330.5 | 96 | 96 |
| ENSMUSG00000062054  | Iah1       | isoamyl acetate-hydrolyzing esterase 1 homolog (S. cerevisiae)    | -0.3 | 2.2E-01 | 151.1  | 322.3 | 85 | 86 |
| ENSMUSG00000071662  | Polr2g     | polymerase (RNA) II (DNA directed) polypeptide G                  | 0.5  | 6.1E-03 | 986.3  | 322.3 | 91 | 84 |
| ENSMUSG00000027667  | Zfp639     | zinc finger protein 639   | 0.1  | 5.6E-01 | 406.9  | 296.3 | 88 | 81 |
| ENSMUSG00000029864  | Gstk1      | glutathione S-transferase kappa 1                                 | 0.6  | 2.9E-05 | 1058.2 | 294.5 | 93 | 84 |
| ENSMUSG00000057411  | Fam173a    | family with sequence similarity 173, member A                     | 0.2  | 4.4E-01 | 432.3  | 291.5 | 94 | 86 |
| ENSMUSG00000000088  | Cox5a      | cytochrome c oxidase subunit Va                                   | 0.7  | 2.2E-42 | 1525.7 | 281.0 | 91 | 90 |
| ENSMUSG00000074754  | Gm561      | predicted gene 561  | 0.2  | 4.9E-01 | 420.8  | 280.0 | 98 | 94 |
| ENSMUSG00000033429  | Mcee       | methylmalonyl CoA epimerase                                       | 0.8  | 2.6E-05 | 1550.1 | 255.8 | 80 | 87 |
| ENSMUSG00000016427  | Ndufa1     | NADH dehydrogenase (ubiquinone) 1 alpha subcomplex, 1             | 0.2  | 3.5E-01 | 379.0  | 254.1 | 95 | 95 |
| ENSMUSG00000001445  | Mrp110     | mitochondrial ribosomal protein L10                               | 0.3  | 6.1E-02 | 549.3  | 250.9 | 86 | 86 |
| ENSMUSG00000039887  | Alg14      | asparagine-linked glycosylation 14                                | 0.1  | 7.6E-01 | 307.4  | 244.2 | 85 | 82 |
| ENSMUSG00000041571  | Sepw1      | selenoprotein W, muscle 1   | 1.0  | 2.2E-11 | 2527.7 | 234.9 | 84 | 82 |
| ENSMUSG000000067713 | Prkag1     | protein kinase, AMP-activated, gamma 1 non-catalytic subunit      | 0.4  | 2.0E-02 | 604.3  | 232.2 | 81 | 80 |
| ENSMUSG00000010406  | Mrp152     | mitochondrial ribosomal protein L52                               | 0.2  | 4.5E-01 | 330.4  | 230.2 | 97 | 99 |
| ENSMUSG00000020949  | Fkbp3      | FK506 binding protein 3   | 0.6  | 2.4E-03 | 862.3  | 225.6 | 93 | 95 |
| ENSMUSG00000078348  | Sf3b5      | splicing factor 3b, subunit 5                                     | 0.6  | 1.2E-06 | 838.6  | 216.6 | 91 | 93 |
| ENSMUSG00000032526  | Deb1       | differentially expressed in B16F10 1                              | 0.7  | 1.9E-10 | 881.9  | 186.6 | 95 | 89 |
| ENSMUSG00000079437  | Tmem179b   | transmembrane protein 179B  | -0.2 | 3.8E-01 | 121.8  | 185.3 | 85 | 88 |
| ENSMUSG00000041736  | Tspo       | translocator protein  | -0.3 | 5.9E-02 | 89.6   | 168.0 | 82 | 83 |
| ENSMUSG00000053453  | Thoc7      | THO complex 7 homolog (Drosophila)                                | 0.6  | 5.1E-03 | 652.8  | 147.6 | 81 | 87 |
| ENSMUSG00000063787  | Chchd1     | coiled-coil-helix-coiled-coil-helix domain containing 1           | 0.5  | 1.7E-05 | 376.5  | 122.8 | 81 | 83 |
| ENSMUSG00000034880  | Mrp134     | mitochondrial ribosomal protein L34                               | 0.8  | 6.0E-21 | 720.3  | 118.7 | 82 | 88 |
| ENSMUSG00000035443  | Thyn1      | thymocyte nuclear protein 1                                       | 0.4  | 2.3E-01 | 335.1  | 113.6 | 95 | 87 |
| ENSMUSG00000035048  | Anapc13    | anaphase promoting complex subunit 13                             | 0.5  | 2.4E-03 | 331.3  | 100.7 | 82 | 82 |